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A CLUMP OF RIVER RED GUMS (*Eucalyptus Rostrata*), AN IMPORTANT SOURCE OF HONEY
IN AUSTRALIA.—Photo by B. Blackbourne.

LABELING AND MARKETING—E. G. LeSturgeon. COMB OR EXTRACTED HONEY—Practical Opinions.
EVERY STEP IN TRANSFERRING—A Picture Story. ORGANIZING AGAINST DISEASE—Samuel Cushman.

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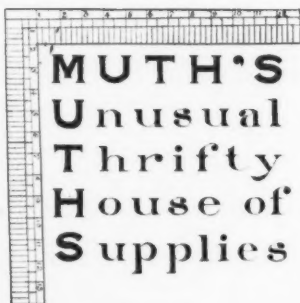
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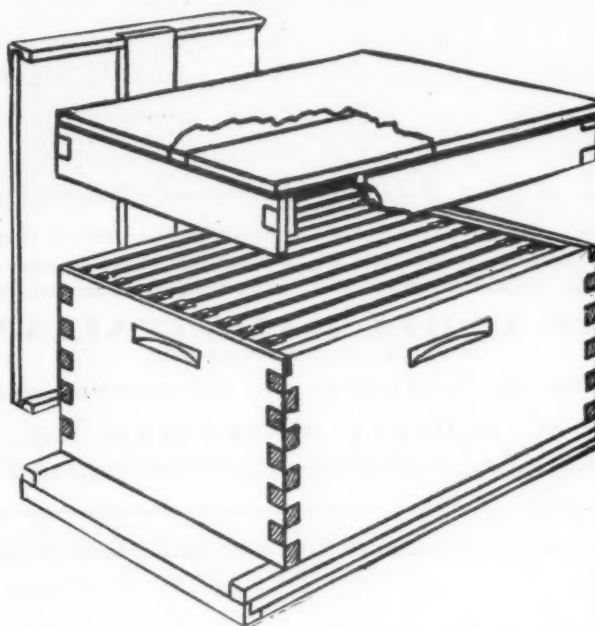
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A five (5) pound package of Medium Brood Foundation Free with every \$50.00 order
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PURE THREE BAND ITALIANS

MY QUEENS GIVE SERVICE

Untested \$1.00 ea., \$90.00 per 100. 1924 Tested \$2.00 ea. Only good queens are shipped. No disease in my yards

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How European Foulbrood Can Now Be Conquered

Seldom has anything ever startled or delighted the beekeeping fraternity like this story of how E. F. B. has at last been conquered. Beekeepers everywhere are elated at the new possibilities. Here is how it all happened.

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A Special Sodium Hypochlorite Does It.

What General Laboratories did was simply to make a special sodium hypochlorite and develop a way for apiarists to use it successfully.

Be-Helth is the name of this wonderful sodium hypochlorite solution that is now such a boon to beekeepers everywhere. You need suffer E. F. B. losses no longer. Feed Be-Helth in sugar syrup from the first day the bees are put out in spring. They will clean out dead larvae quickly. Brood will be healthy and strong. Heavy honey production will follow.

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Send for your trial gallon today. Full directions, including what Be-Helth will do for A. F. B., with each package. Your apiary is not safe without Be-Helth. Mail the coupon now.

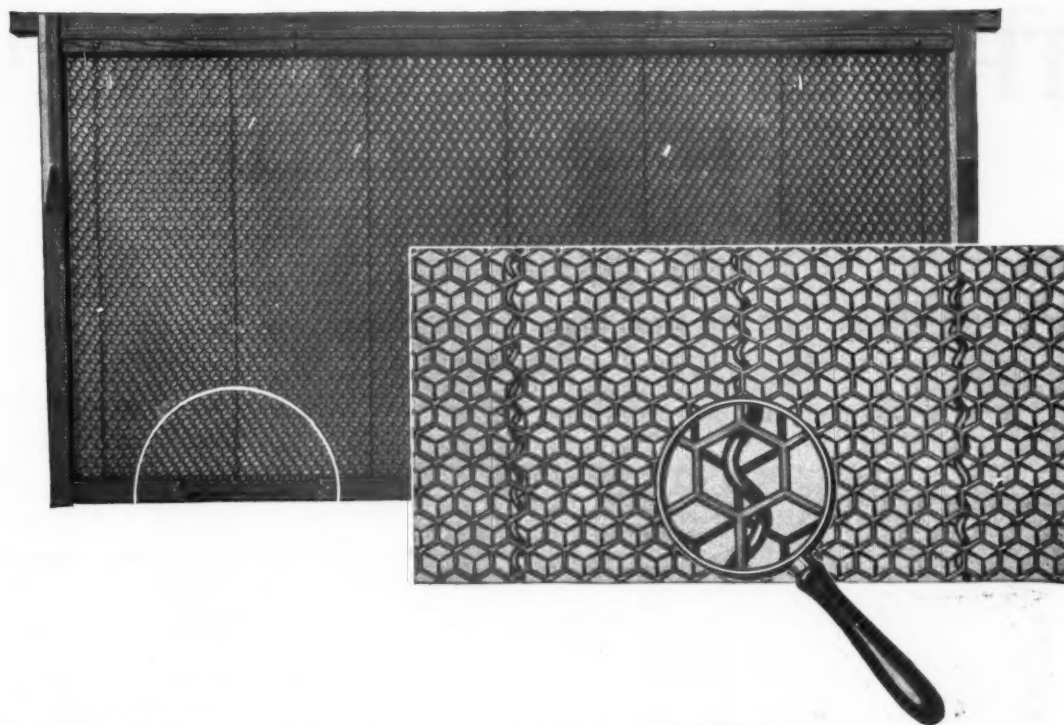
General Laboratories, Dept. 90.
Madison, Wisconsin.

Gentlemen. Please send me 1 gallon of Be-Helth and literature on how to use it for E. F. B. _____ A. F. B. _____

Enclosed is my check for \$3.00.

Name _____

Address _____



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*Dadant's Wired Foundation
saves hours of wiring labor*

AN EXCLUSIVE feature of Dadant's Wired Foundation used in slotted bottombar frames. ☞ But this is only one of its delights—

- Holds any load without sag
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**A Free Brood Nest
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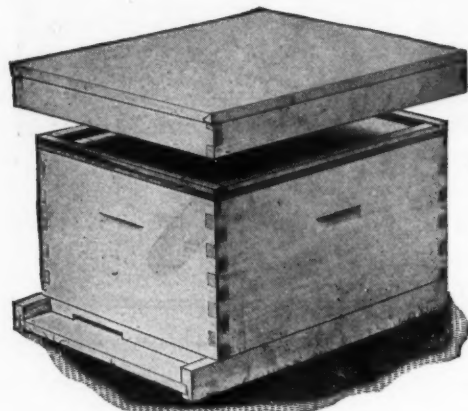
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consider what
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The Hive with all the
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One-story Standard Hive with modern cover

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Not too heavy to be easily moved from one location to another. Returns big crops of honey. We recommend the 10-frame size.

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Made of the best lumber, air-dried, with close fitting lock corners.

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Preferred by all experienced honey producers. Greatly improved. Will last a lifetime. A protection to the bees from the heat and cold.

INNER COVER

Greatly improved this year. The best cover to be had by the beekeeper.

REVERSIBLE BOTTOM BOARD

Made of cypress that lasts for years.

The Standard Hive with a shallow super (the food chamber hive) makes the cheapest big hive on the market. The champion crop of honey in Indiana for 1923 was produced in the food chamber hive.

THE FINEST SECTIONS

We have the whitest and clearest basswood this year that we have ever had. The result is the best of all sections. Send for sample.

"This year we ordered some 30,000 of your sections and it affords us great pleasure to say that I believe they are the finest and most satisfactory lot of sections we have ever used." June 30, 1923. J. E. CRANE, Middlebury, Vt.

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WEST SIDE STATION

THE DIAMOND MATCH CO.

APIARY DEPT.

MANUFACTURERS OF
BEEKEEPERS' SUPPLIES

CHICO, CALIFORNIA, U. S. A.

The entire resources of this great plant are now near to you

DIAMOND Hives.
STERLING Hives.
(With metal covers)
Modified Dandant Hives.
Extracted Honey Supers.
Comb Honey Supers.
Sections.
Diamond Foundation.
Beekeepers' Tools, etc.



The Diamond Match Co.'s Factories and Yards at Chico, Calif., cover 220 acres.

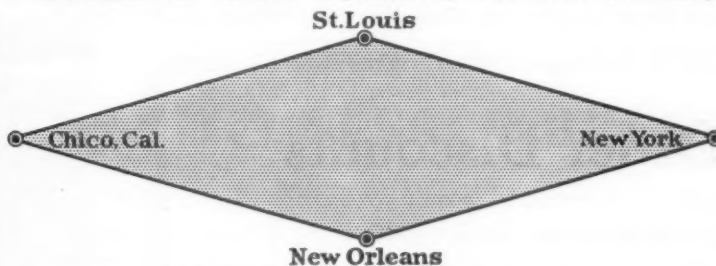
DIAMOND Hives.
STERLING Hives.
(With metal covers)
Modified Dandant Hives.
Extracted Honey Supers.
Comb Honey Supers.
Sections.
Diamond Foundation.
Beekeepers' Tools, etc.

To meet the ever increasing demand for "Diamond" Beekeepers' Supplies, distributing warehouses have been established at Woodhaven, New York, (Hoffman & Hauck); St. Louis, (The Diamond Match Co.); New Orleans, (The Diamond Match Co.) This will enable Beekeepers to obtain their supplies promptly and at a greatly reduced cost

PRICE

Every dollar paid stands for actual value received; no money that is paid us is wasted in inefficient methods or by lack of intelligent foresight. From the falling of the tree to the finished hive, no middleman takes out a profit; full advantage of this saving is given to the purchaser.

Our Emblem the "Diamond" is protected by excellence of workmanship.



THE DIAMOND POINTS OF DISTRIBUTION

QUALITY

Diamond Hives, etc., which are manufactured from Sugar Pine from our own forests present every desirable feature, and embody every improvement in design and betterment in construction. Diamond Hives have a reputation for high quality well nigh world-wide.

Beekeepers who study economy should consider the use of the Diamond Standard Supplies in their apiary. Diamond Foundation is uniformly excellent and means Foundation Satisfaction.

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Send all orders and inquiries to Chico, Calif. Shipment will be made
from nearest distributing point named above.

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BEE SUPPLIES

THAT ARE MADE TO SATISFY

Order your supplies now and make sure of having them ready on time. We have a complete line of supplies on hand at all times and can give you real quality and service.

Special prices to Beekeepers' Associations.

Write for our new 1924 catalog.

A. H. Rusch & Son Co., Reedsville, Wis.

WE MANUFACTURE FOUNDATION

— Our Specialty is —

Working your wax into foundation, for cash or wax in payment. Write us for list of supplies and get our prices on the best Hives, Sections, Frames, etc., made in Wisconsin.

GUS DITTMER COMPANY
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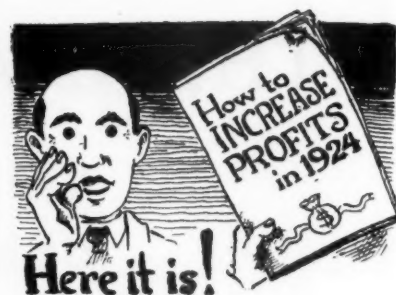
Early Order Discounts

EVERYONE, including the beekeeper, is looking for a way to save money—this is one of them.

SECTIONS, SECTION HOLDERS, SEPARATORS, HOFFMAN BROOD FRAMES—ALL AT LIBERAL DISCOUNTS. Write in for quotations on the supplies you need for the 1924 season.

Orders forwarded immediately on receipt. Newly manufactured stock on hand with more in process.

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146 Newton Ave. N. and 159 Cedar Lake Road
MINNEAPOLIS, MINN.



After many years' work and study among the bees, and after more than 30 years of serving the beekeepers, we have come to know what counts most in a strain of bees and to know the requirements of the big honey producers of America.

Our latest booklet, "How to Increase Profits in 1924," places our experience at your command. It is a timely booklet, for it discusses a step in the purchasing of bees and queens which is most important to the man who must get the most out of this year's work.

Your request on a card will bring a copy to you free.

W. J. FOREHAND & SONS
Fort Deposit, Ala.

CAUCASIAN BEES AND QUEENS

April 1st, I offer to the public some of my Caucasian bees that I have tested out in a commercial way for many years and can recommend to those who are not satisfied with their present stock.

Three-frame nuclei with queen, \$6.00. Tested queens, \$2.00; untested, \$1.50.

WILDER'S CYPRESS HIVES

Will give you satisfaction in point of service and prices to suit you.

Write for prices.

DIXIE BEEKEEPER

Published monthly. Brim full of news and practical information for beekeepers. Sample free.

J. J. Wilder, Waycross, Ga.

20 TO 40 PER CENT DISCOUNT
on Italian package bees to be shipped between May 15 and 25. Write for prices and particulars. Free of disease. Good service and satisfaction guaranteed.

TUPELO APIARIES,
J. L. Morgan, Apalachicola, Fla.

Package Bees

"A Dollar a Pound"

One 2-lb. package of bees ----- \$2.00
Queen additional ----- 1.00

NUCLEI

2-frame standard Langstroth,
with queen ----- 3.00
3-frame Standard Langstroth,
with queen ----- 3.50
2-frame Jumbo Langstroth,
with queen ----- 3.50
3-frame Jumbo Langstroth ----- 4.00

Our bees are three-band leather-colored Italians.

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602 N. 9th Ave.,
PHOENIX, ARIZONA

MONEY AND SATISFACTION FOR YOU

Save one profit by buying direct from factory. Standard, Jumbo and Modified Dadant Hives; cedar or pine. Write for catalog.

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WESTERN BEEKEEPERS!

We handle the finest line of bee supplies. Send for our 1924 price list. Our quotations will interest you.

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Read what J. E. Parent of Chariton, N. Y., says:

"We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames and a great deal of other work."



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BEE
ESCAPE
SAVES
HONEY
TIME
MONEY

For Sale by all dealers
If no dealer, write factory

R. & E. C. PORTER, MFRS.
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(Please mention Am. Bee Journal when writing)

Why Good Queens Pay

Because they lay more eggs than poor ones. No one expects a weak colony to gather as much honey as a strong one. And you are sure to have weak ones unless you have good queens in them. Good queens are worth more to a beekeeper than any other investment he can make.

We have made queen rearing a life study and use only the best methods in rearing our queens. Our breeding stock is carefully selected.

We guarantee perfect satisfaction or money refunded.

"THREE BANDED OR GOLDEN QUEENS AFTER APRIL 1"

Select	Untested	Untested	Tested
1 Queen	\$1.20	1 Queen	\$1.00
12 Queens	11.00	12 Queens	10.00
100 Queens	85.00	100 Queens	75.00

Breeders \$5.00 to \$25.00 each
Golden queens are reared five miles from other breeding yards.
Package bees, nuclei, or full colonies quoted on request. Let us book your order early. Only 10% required; balance before shipment.

THE CITRONELLE APIARIES, Citronelle, Ala.

BEE SUPPLIES

We carry a full line of supplies that are needed in a modern apiary. The best money can buy. Give us an opportunity to submit our prices to you before placing your order for next season.

Send us your name and address and we will mail you a copy of our new catalog, which will be ready for mailing January 1st.

AUGUST LOTZ COMPANY BOYD, WISCONSIN

TENNESSEE-BRED QUEENS

Fifty-two Years' Experience in Queen-Rearing
Breed Three-Band Italians Only

	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12
Untested.....	\$2 00	\$ 8 50	\$15 00	\$1 50	\$ 7 50	\$13 50	\$1 25	\$ 6 50	\$11 50
Select Untested.....	2 25	9 50	18 00	1 75	9 00	16 00	1 50	7 50	13 50
Tested.....	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
Select Tested.....	3 50	19 50	35 00	3 00	16 50	30 00	2 75	15 00	27 00

Select tested, for breeding, \$7.50.

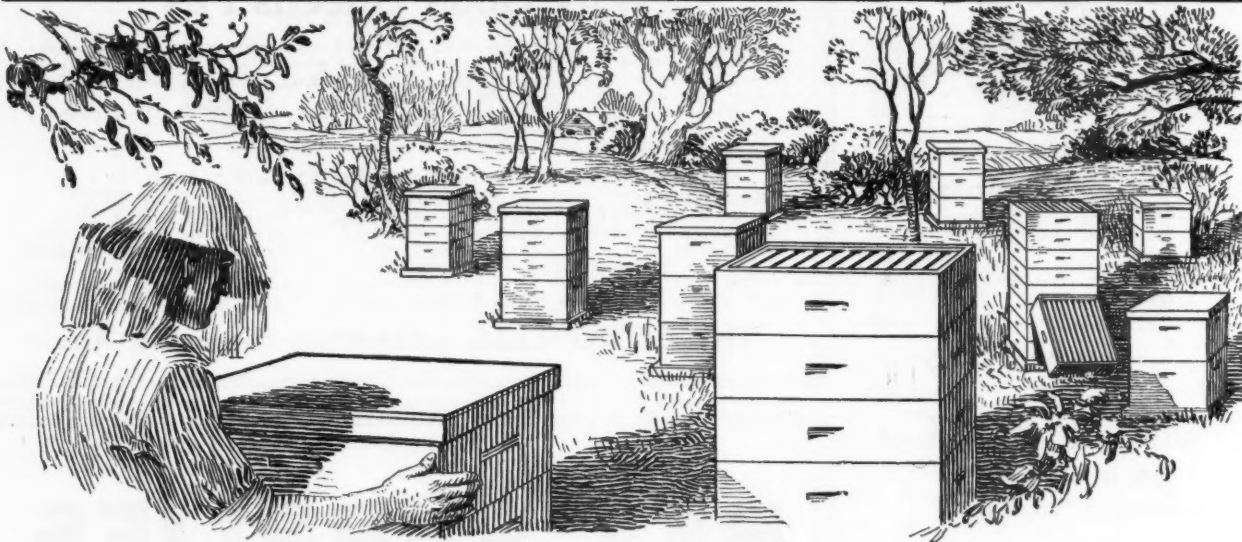
The very best queen, tested for breeding, \$15.

Capacity of yard, 6,000. I sell no bees by the pound or nuclei, except with high-priced tested and breeding queens.

Queens for export will be carefully packed in long-distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, Spring Hill, Tenn.

FIFTY YEARS FOR PROGRESS IN BEEKEEPING



Are You Ready for the Honey Flow?

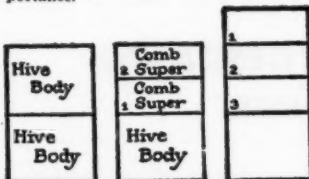
What Five Bee Experts Say About "More Honey Through Proper Supering"

Ed. Hassinger, of Wisconsin says that sufficient storage room is only second to sufficient egg room as a method to control swarming and to get better honey crops.

J. F. Garretson of New Jersey agrees on the importance of storage room.

E. W. Cothran of Texas and Roy Rabbitt of Idaho place storage room as the third most important point.

F. W. Redfield of California considers proper storage room of first importance.



At the honey flow, with your colony of bees in two-hive bodies, the proper method is to displace one hive body with two comb supers. In adding additional supers, follow the arrangement shown at the right. Remove supers as soon as completely filled. At close of flow replace second hive body filled with capped honey for winter.

How to Market Honey

\$275 in cash prizes for the best ideas and tested experiences. It costs you nothing to enter—write for rules and suggestions on this Golden Anniversary prize contest of ours. Contest closes May 1, 1924.



"Eat More Bread and Honey"

PROFIT in beekeeping depends very largely on being ready at all times—and especially, upon being ready for the great spring honey flow.

Here's what "being ready" means:

1. Bringing your colonies through the winter strong and vigorous.
2. Providing not only hives but supers—in ample number—to prevent overcrowding and swarming. The most successful practical beekeepers in the country favor *four supers to the hive* as the best number.
3. Having at hand all the necessary bee supplies a little in advance—for when they are needed they are usually needed at once.

Plan for your 1924 requirements in Beeware now—go to our nearest dealer and order while his stocks are complete and he can sit in with you in figuring out your requirements.

"Honey for Sale" Bulletin Board Free

If your order for Lewis hives, supers and other Beeware amounts to \$50, have your dealer write us and we will send you free of charge our best "Honey for Sale" bulletin board, size 19"x 24". This offer is good only while our supply lasts. Take advantage of it at once.

LEWIS BEEWARE

G. B. LEWIS COMPANY

Home Office and Works • Watertown, Wisconsin, U. S. A.

Export Office, 25 Broad Street, New York City, U. S. A.

Four Branches in active charge of our own managers, who will give your correspondence direct attention and ship your orders at once:
Address G. B. Lewis Co., 328 Broadway, ALBANY, N. Y.; 408-10 Twelfth St., LYNCHBURG, VA.; 132 Webster Avenue, MEMPHIS, TENN.; 415 South St. Francis St., WICHITA, KAN.

450 DEALERS THROUGHOUT THE U. S. A.



AMERICAN BEE JOURNAL



VOL. LXIV—NO. 3

HAMILTON, ILL., MARCH 1924

MONTHLY \$1.50 A YEAR

EVERY STEP IN BOTTLING HONEY ✓

III. Labeling and Marketing—By E. G. LeSturgeon.

In the American Bee Journal for November we discussed the density of honey and the manner in which it should be handled to render it liquid when being prepared for bottling. In the February number we gave the ten steps that we have found necessary for packing the honey in the best possible form for the trade. We have tried to pack this honey in a way that will retard granulation as much as possible and at the same time retain the delicate flavor and aroma of the freshly extracted product.

We must now choose a label for our bottles or jars. This label is the first step in marketing and care should be used in its selection. The label is the first thing a customer sees when he buys our honey. He will receive some sort of an impression of us and of our product when he sees our label. It is said that first impressions are the strongest and that first impressions persist. It is wise to have the label neat and attractive and thus make that first impression a pleasant one. An alluring label will often sell an inferior article when a better piece of merchandise, untidily dressed, will be ignored or rejected.

The label should carry the word HONEY very prominently. This is the name of our product. It is also a word that stands in the subconscious mind of every human being for the good and the pure and the sweet. It is a word to conjure with. It should be the central thought in our label, and, when the label is completed, the word HONEY should be its most prominent feature and its central theme.

In many minds there still lingers a fear of adulteration, and it is not unwise to have the label assure the purchaser of the purity of the product. Such words as "Purity Guaranteed," "Gathered by the Bees," "Pure and Sweet and Wholesome," or similar expressions, may be used on the label to good advantage. We would not advise the use of the word "Pure"

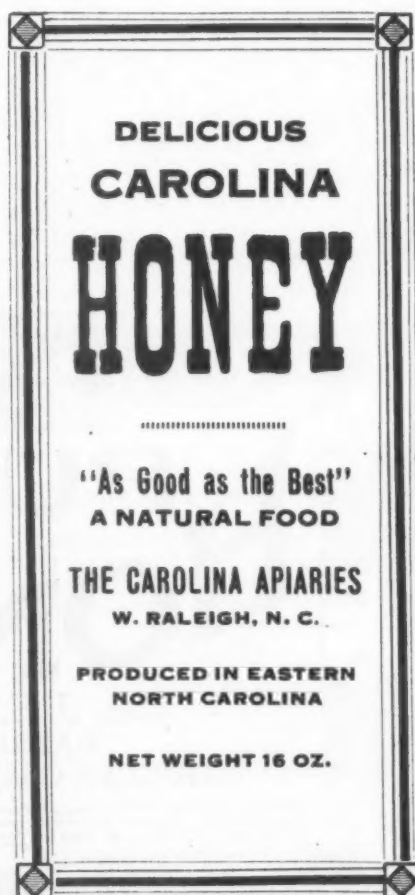
as prominently as the word "Honey." If the central part of the label says "PURE HONEY," giving equal emphasis to both words, it is possible that this may also emphasize in the mind of the purchaser that there is a honey on the market that is not pure. What we want to emphasize on our label is that our honey is pure—not to infer that there may be some honey that is not pure. This

may seem to be a fine distinction, but it is a very important one.

Where the honey, to be packed, is from a certain area where there is a distinctive flora, the decoration of the label might carry the picture or name of this flower. A Texas label could feature the mesquite, or cotton or catclaw bloom, for instance, rather than show the picture of a clover blossom. California honey could well show on its label a spray of orange blossoms, and eastern honey could carry a tulip-poplar blossom, as an emblem of adornment. If one has, in any sense, a local or localized trade—no matter how great its area—some well-known emblem or background reference should be used to beautify the label and lend it a local color. A Minnesota beekeeper or association could well use some reference to the North Star or a picture of the northern heavens with the Dipper and the Polar Star emphasized, as a background for the label, just as the Colorado association uses the picture of a bear. So with any state emblem or state name.

A Pennsylvania beekeeper could give his label local color by using the old State House or the Liberty Bell in his label, either as a feature of the label itself or as a background, just as the Texas association uses the Alamo in its label. A place or thing well known in the locality where the honey is produced or sold can be thus utilized in making the label attractive.

To show my idea, in concrete form, I am asking the editor to reproduce a label used by an Arizona beekeeper. Most people think of Arizona as a desert state. Some citizens of Arizona would perhaps shrink from an acknowledgment of this and try to make the outsider forget it. Not Mr. Collier. He seizes the desert itself and makes the purchaser of his honey realize its poignant charm and weird beauty as soon as the eye falls upon his label with its vivid background. The desert background,



Label featuring the locality in which the honey is produced.



In this unusual label Mr. Collier has featured the familiar plants of the desert from which his honey comes.

in its turn, causes his label to stand out more prominently, and it fairly hurls the central word HONEY into the eye of the customer.

In choosing the color scheme for our labels it makes a difference whether we are to use them on tin or glass packages. One color or combination of colors will show up well on a glass jar of honey, whereas a different color or combination will harmonize better with the background of a tin pail. This is a matter of taste. Very often the printer can help in the selection of the color scheme.

As stated in a former article, it is wise, especially in the case of labels intended for tin containers, that a few simple directions for re-liquefying the honey, with a carefully worded warning against overheating, be incorporated in the label.

We have now chosen our labels. We must affix them to our jars. There are many recipes for home-made pastes, and some of these, even plain wheat flour or corn starch paste, are good, but we prefer the regular commercial pastes. They are dependable and if used correctly are quite inexpensive. There is a handy kink, in applying the paste to the labels, which we will describe. It is illustrated herewith. A very smooth board is used and the cap from a jar of paste is removed. The smooth board is placed over the open mouth of the bottle and the whole inverted. Holding the jar, mouth downward, firmly against the board, we slide it back and forth a few times. This covers the board with a thin film of paste. The labels are wiped against the board and pasted on the jars. As the paste is taken up, the bottle is again moved a few inches back and forth and the operation continued.

The above method keeps us from getting too much paste onto our labels. The less paste used the better. This is a very important point. Nearly always the tendency is to use too much paste. Most failures and all of the "messy" jobs are occasioned

from this fault alone. Use just as little paste as possible and be sure that it is evenly distributed over the label.

The secret of making your container attractive lies in properly affixing the label. The container should be wiped dry with a cloth. The label, which has been very thinly covered with paste, should now be placed in position. The center of the label should be pressed firmly first and then rubbed toward the ends. All air bubbles should be rubbed from under the paper. The edges of the label should be true with the lines of the container. All excess paste should be removed so the container will dry clean. In all cases the paste must be spread very thinly.

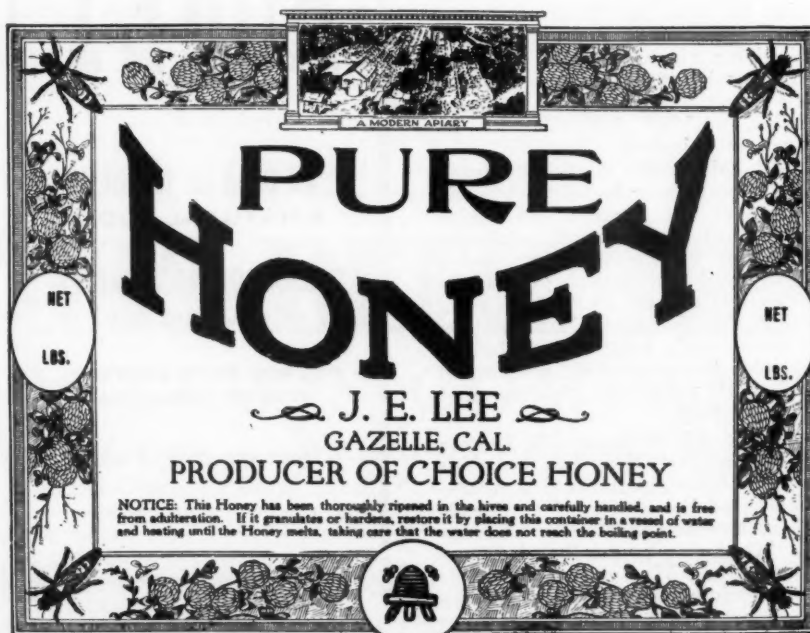
The beekeeper may buy the most artistic container and a beautiful label, but if the label is not put on correctly the result is an offense to

the eye and a loss of sale. Small as it may seem, one of the greatest factors in properly labeling honey containers is the proper use of paste. Home-made, boiled flour paste will fasten labels to either tin or glass if it is spread **very thinly** over the label and the surface of the container is clean. Home-made paste has the disadvantages that it sours quickly and dries up rapidly. Small lots of it are hard to make, and, as few beekeepers use much paste at a time, it is much more economical to buy the commercial liquid pastes. This form of adhesive can be purchased in wide-mouthed bottles ranging in size from an ounce to ten pounds. These pastes are so prepared that they will neither sour nor dry in the bottle.

We must now market our honey. A house-to-house canvass will develop a local trade. If we have honey at all times, a regular demand can be built up. A "Honey for Sale" sign on the gate will cause a steadily increasing number of people to grow into the habit of calling regularly for their supply. Notices in the local paper and the distribution of leaflets and recipe booklets at picnics and gatherings will aid. If the county holds a fair, be sure and have a honey display, with an observation hive filled with bees to attract and stimulate the interest of the crowd.

Such booklets as "Facts About Honey and the American Honey Producers' League recipe book, "Honey, How and When to Use It," with our name printed on them, should be distributed to the housewives in the neighborhood. These not only keep the product before the trade, but also educate the public to a realization of the value of honey and its manifold uses.

Should the crop be so large that we cannot build up a trade which will take up all of it in a retail way, let us arrange with the local grocer,



A widely used two-color label which emphasizes the purity of the product.



Putting on the labels.

or several of them, to handle the honey for us. They can, with our assistance, arrange window displays, and they will also help to distribute advertising matter concerning the use of honey in general and our brand in particular. When we market a portion of the product through the retail grocer we must permit him to make a profit on its sale. Do not undersell him. The price to the consumer should be higher than the price made to the grocer. When selling direct we are acting not only as producer and bottler, but are also acting as merchant, and in addition to our wages as producer we should demand the wages of a merchant.

Should the business grow to the point that our local trade, and the grocers in our vicinity, cannot use up all of our product, we must arrange with a wholesale grocer, or several of them, to sell the honey to markets more distant from home. Again, we, being relieved of a portion of the labor, must pay the wholesaler for performing his duty. This can be accomplished by selling to the wholesaler at a price reasonably lower than the price, in smaller quantities, to the retailer. Protect the wholesaler's price by not underselling him.

A local trade, where we can dispose of the crop direct to the consumer, is far the best plan, because, in addition to our wages as producer, we can also save and earn the wages of the wholesaler and the retailer. **But we must be sure to collect these wages!** Do not underprice the honey. The price named to the consuming trade should be high enough to allow a generous profit to the retailer, and the price named to the latter should be high enough to permit a margin for the wholesaler. This is one of the most important lessons in this series. Only by learning it and carefully observing it can we hope for a successful campaign of establishing a growing business. Should we fail to keep faith with the "channels of trade," our label will never become known far beyond the narrow confines of our personal contact. Grocers and wholesalers will soon lose interest in us and our product if we

do not protect their prices when making direct sales.

But we intend to observe this rule, because we realize that when we act as a merchant or a series of merchants we should be paid for our services as merchants as well as our service as producers.

We know that our honey will sell. We have used only the whitest and densest honey we could find. In liquefying it we have been careful to heat it very slowly and at relatively low temperatures. We have used only clear flint, straight-side jars with a wide mouth and an airtight seal. We have been scrupulously clean and have filled the jars carefully with a gooseneck faucet, so that there is no scum on the honey. Our jars are even net weight in half-pound sizes from eight ounces to two and one-half pounds. Our label is neat and attractive, carrying some decoration as to flora or name that gives it a local atmosphere, while at the same time especially emphasizing the name of the product itself. We have tastefully adopted the color scheme of our label and have affixed them with a very thin film of good paste. We are proud of our product and not afraid to guarantee its purity and quality and delicate flavor.

We have now followed all the steps necessary in bottling honey and feel safe in saying that none can surpass our brand. Our label will become more and more favorably known, and, as our business grows, the grocers and wholesalers will look upon our product as a staple article of commerce.

San Antonio, Texas.

DISEASE

By F. B. Paddock.

We find, with beekeepers, that ignorance is at the bottom of most all of the trouble with disease dissemination. A large number of good intentioned and well-meaning beekeepers are attempting to produce honey in the presence of disease. There is still another class of beekeepers who know what the diseases are and have a wholesome fear of them, but they are not sufficiently

well informed to be able to detect them. They also have a hesitation in sending suspected diseased brood for diagnosis. There are a good many beekeepers who try to treat their diseased colonies in some manner which will reduce the probable loss and, of course, their treatment is wholly ineffective, but spreads contamination.

In disease eradicating efforts during the last summer, many interesting cases have come to our attention. These range all the way from interesting superstitions to a willful violation of the law. The first class can be dealt with and are really an object of pity, but the latter class demand the most stringent measures.

One of the most fruitful sources for the spread of disease is the farm public sale. One community has recently become well infected with American foulbrood through the agency of several parties buying a few colonies each from an apiary of bees which were offered at a farm sale. The seller and the several purchasers probably did not know that there was such a thing as a disease among bees. The purchasers are now well aware of the fact. Another form of spreading the disease is through the shipment of queens and nuclei. This is probably not done intentionally on the part of the shippers, but certainly results disastrously for the various purchasers. Very evident cases have come to our attention during the past season of such dissemination.

In the beekeeper's attempt to save, he is often lured by the cheap prices of second-hand equipment. This is especially true in connection with public sales where the equipment originated after the bees died out in the farm apiary. One case recently came to our attention of a large sale of full drawn combs. It developed that these combs were contaminated with disease, and terrific loss ensued from their use.

The shipment of honey is one of the most difficult factors to contend with. It goes without saying that in the territories surrounding the larger cities, there will be diseases for a long time to come.

Probably, then, the two most important factors in the continuous spreading of disease are: First, the lack of knowledge, which is also accountable, for the introduction of disease, and second, the inability of beekeepers to make the initial necessary sacrifices which result in the continued spread of disease.

A Good Crop

I had one apiary with spring count of 10 which gave me this last season over 1,500 full sections and increased to 22 colonies. I gave new brood frames and honey to all new swarms (each one three or more), and I think it helped, as all hives went into winter with full supply of honey and over-supply of bees.

Dr. F. S. Hull.

AMERICAN BEE JOURNAL

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THE EDITOR'S VIEWPOINTS

MAPLE SYRUP MEN SELL TOGETHER

A group of New York farmers who for years have made and sold maple syrup individually have recently organized the Maple Syrup Producers Co-operative Association. They are pushing a 2-ounce package of maple syrup for use of individual customers in hotels, clubs, restaurants and other eating places where waffles or cakes are served. Maple syrup is a favorite spread for breakfast cakes, and this is the trade that these producers are cultivating especially. The product is marketed under the trade name of "Frost Elf Maple Syrup." A recent issue of "The Glass Container" has an illustrated article concerning this product, and states that it is meeting with enthusiastic favor in many high class clubs where it has been introduced.

Unfortunately for the beekeeper, there are but comparatively few places where honey is available to the consumer as a spread for cakes or waffles. Since a very large part of the people living in the cities dine at restaurants instead of eating at home, it is important to devise some means of placing honey on the bill of fare.

To one who travels about and lives much at hotels it soon becomes apparent that honey is no longer within the reach of the greater portion of the city population because it is not handled by eating houses or grocery stores to the same extent as staple food products.

BOTTLING HONEY

Our readers will find in this number another article from the pen of our old friend E. G. LeSturgeon on honey sales. This has to do with bottling honey. The editor, in reading it, could not help thinking back to the time when he did the work of bottling honey, or rather, mainly, of putting it into five and ten-pound pails and labeling them.

Some people have no idea of neatness. Usually it is the man of the house who is short on that subject. But even if we are careless, we can nevertheless notice when a thing is carefully done and when it is slovenly done. I remember instructing a man who worked for me to label a lot of pails that had been filled with honey. I did not give a thought to the possibility of his being too careless for that job. But when I went to examine what he had done I stopped his work at once. Better not have the honey pails labeled than to have the job done in that way. Labels turned sidewise, so they projected above at one corner and below at the other corner; paste in lumps under the labels; paste sticking on parts where no paste was needed; labels soiled by soiled fingers, etc. A pig might have done better work. When you read friend LeSturgeon's article, you will readily see that he has been there, that he has made paste, used it, and has labeled both jars and pails full of honey. He knows where the shoe pinches in bottling honey, what we should do and what we should avoid.

BEES AND COFFEE PRODUCTION

We acknowledge receipt of Circular No. 79 of the Insular Experimental Station of Porto Rico entitled "Las Abejas En Los Cafetales" (The honeybees in the coffee plantations). This little pamphlet, in the Spanish language, states that some parties made the assertion, in Porto Rico, that the coffee tree produced less coffee in the localities where bees were kept than in other spots. Experiments showed that, on the average, larger crops of coffee were harvested where the bees are kept. A diagram of the coffee blossom indicates the need of external agencies for the fertilizing of the bloom, which may be wind, rain, or the visits of insects. This is simply a confirmation of the fact that bees are generally useful in the fertilization of flowers.

REARING DRONES

In the present number Mr. Jes Dalton gives some very good criticisms of the present methods of queen-rearing and urges beekeepers who rear queens for sale to raise all the drones they can: "Allow all the best colonies all the drone comb they can use, denying drone combs to only the poor ones." He also states that "a large percent of beekeepers and all the bee publications are opposed to even trying to select and breed drones."

Mr. Dalton is a breeder of queens, and states very correctly that "one neglected hive in a fence corner will raise more drones than a whole modern apiary." That is true; but as a rule, it is the neighbors' neglected apiaries that are raising the drones.

We have often advised the beekeepers who wish to raise good bees to see to it that their neighbors' bees are of good quality, by Italianizing their bees for them at very low prices. We practiced this for years, and so our neighbors' neglected bees were rearing the right kind of drones for us. We were not the only ones to do this, for John M. Davis, when I visited him, some years ago, told me that he did not know of a colony of common bees within three miles of his apiary. He even offered premiums to the colored people of his vicinity for any colonies or swarms of bees that they could find in the woods.

In "The Honeybee," paragraph 512, we wrote:

"In selecting a colony for drone production, the color and size of the drones should not be considered as much as the prolificness of its queen and the qualities of its workers, unless you wish to breed for beauty. Place two drone combs in the center of the brood chamber of this colony as soon as it has recuperated from its winter losses - - -"

We would consider ourselves as overdoing the rearing of drones if we did as Mr. Dalton says: "allow all the best colonies all the drone comb they can use." It would be really cheaper to Italianize all our neighbors' bees than to do this.

However, it is a good thing for Mr. Dalton to call attention to the necessity of rearing good drones. But a colony that possesses two drone combs in the center of the brood nest will rear thousands of drones, provided it is kept well supplied with honey, for drones will not be tolerated unless the bees of their hive have plenty of food.

To show Mr. Dalton that he is mistaken when he states that "all the bee publications are opposed to even trying to select and breed drones," we will quote at random, from page 165, third column, American Bee Journal for 1922: "Rear your drones from one or two of your best colonies." Perhaps if we were queen breeders, like Mr. Dalton, we would say 100 or 200, instead of one or two. But two colonies, rearing plenty of drones, will breed a sufficient number, if we do not allow many from worthless colonies.

SUGAR-HONEY A NEW PRODUCT IN THE MARKET

Domino Sugar-Honey is the name of a new sweet recently placed on the market by the American Sugar Refining Company. It is a mixture of honey and invert sugar. Invert sugar provides a syrup somewhat similar

to honey in many respects, and when mixed with honey to furnish the flavor will be accepted by many as a suitable sweet for use as a table spread. Naturally it can be sold at a lower price than pure honey.

Since Domino products are widely advertised, it is to be expected that sugar-honey will shortly be found on the shelves of all grocers from one end of the country to another. The label shows very clearly that it is a mixture containing honey, and as the advertising of the product features the desirable qualities of honey, it is probable that the new product will be more helpful than harmful to the beekeepers' market.

QUEEN INTRODUCTION

We notice that the article on queen introduction, by Perret-Maisonnette, given on page 510 of our October number, was copied fully by the "Australasian Beekeeper." This is a very good indication that others, besides ourselves, consider Mr. Maisonnette's ideas as worthy of consideration.

A CRITICISM

We wish to criticise, at the same time, some of our contemporaries who, while giving us credit for some of the good things they borrow from us, fail to mention the date at which those things were written. In certain occasions, it looks as if we were behind the times. For instance, one of our European contemporaries who lately quoted an article by our editor, written some 10 or 12 years ago in a Swiss magazine, gives no date. But we mentioned, in that article, Booker T. Washington, who was principal of the Tuskegee Institute at that time. Booker T. Washington has been dead for years, and the re-publication of that article makes it appear as if we were ignorant of that fact.

Perhaps some of our readers will wonder how we came to quote Booker T. Washington on a beekeeping subject. Well, this article was on honey and honey sales, and the editor dwelled upon the fact that many children know but little about honey and would enjoy it, if they could eat it, as Booker Washington enjoyed his Sunday portion of molasses, when he was a slave. Really, the quotation from his book is worth repeating, so here it is. It refers to his taking part in the North, in banquets given for the encouragement of the education of the black race, and having to speak, before white men, upon that subject:

("Up From Slavery," page 245). "I rarely take part in one of those long dinners that I do not wish I could put myself back in the little cabin where I was a slave boy, and again go through the experience there—one that I shall never forget—of getting molasses to eat once a week from the 'big house.' Our usual diet on the plantation was corn bread and pork, but on Sunday morning my mother was permitted to bring down a little molasses from the 'big house' for her three children, and when it was received how I did wish that every day was Sunday! I would get my tin plate and hold it up for the sweet morsel, but I would always shut my eyes while the molasses was being poured out into the plate, with the hope that, when I opened them, I would be surprised to see how much I had got. When I opened my eyes I would tip the plate in one direction and another, so as to make the molasses spread all over it, in the full belief that there would be more of it and that it would last longer if spread out in this way. So strong are my childish impressions of those Sunday morning feasts that it would be pretty hard for anyone to convince me that there is not more molasses on a plate when it is spread all over the plate than when it occupies a little corner—if there is a corner in a plate. * * * Those two spoonfuls of molasses were much more enjoyable to me than is a fourteen-course dinner after which I am to speak."

Is it not a fact that many workmen's children even at the present day, would relish a portion of honey, in their plate, as Booker T. Washington enjoyed the two spoonfuls of molasses? And yet some of our people maintain that there is too much honey produced. It is the distribution which is lacking, even now.

POLISH BEEKEEPING

Our mention of Polish beekeeping in the editorials of our January number has brought an explanation from the editor of "Bartnik Postepowy," The Progressive Beekeeper. This magazine represents the associations of Polish apiarists. It is edited by Leonard Weber and is one of the oldest magazines on bees in Central Europe. It is published semi-monthly.

This magazine holds that the climate of Poland is not suitable for the Italian race of bees. Many of them are killed by flying out too early in spring. They are considered as great robbers and poor honey producers. Yet they are acknowledged by them to have a fine sense of smell and to be very peaceable.

One of their writers, W. Kranowski, has been giving an account of beekeeping from ancient times to the present day, in a series of articles. He also describes honey plants. Hubam is known and praised for its honey producing qualities and as a forage.

This magazine also has each month a "review of bee magazines," in which they mention the most interesting questions discussed in bee matters. Four such magazines are now published in Poland, three in Polish and one in German. The center of beekeeping interest is in Lwow (Lemberg). Ruthenian apiarists belong to these associations with Polish beekeepers. Factories of bee supplies and foundation mills are also in existence there.

THE INTERNATIONAL CONGRESS OF MARSEILLES

The report of the 6th International Congress has just been received. It is in the French language and contains 186 pages. It may be had from Mr. C. Vaillancourt, at the Ministry of Agriculture, Quebec. The price to non-members is \$2.

The same report may also be had from Mr. Leon Tombu, Huy, Belgium, who was the secretary of the meeting. There are a number of good addresses in the report. Next year, we expect to see the Quebec congress printed in both languages.

ODDITIES OF CUSTOM HOUSE DUTIES

The Spanish monthly published at Madrid, La Colmena, in its November number, publishes a protest against duties upon parchment-paper honey holders, bought from France, from the "Mono-Service" manufactory. It appears that the freight and duty on a shipment received by them amounted to more than the original cost, by over 10 per cent. So it is not only in America that exorbitant duties are collected. Spain is equally "progressive."

The duty alone amounted to more than the cost of the goods, the freight being a trifle in comparison. In this country we pay 90 per cent upon veiling material imported, though it is a well-known fact that such goods are not manufactured here.

HONEY TO PRESERVE FRUITS

Concerning honey as a preservative of fresh fruits, as given on page 354 of our July number (1923), by W. A. Braun, the "Apiculture Francaise" has this to say:

"This process may succeed sometimes with fruits not over-ripe, very sound, very dry, and thoroughly covered with honey, in hermetically sealed jars and kept in a cool and well ventilated spot. But it is not infallible by any means and will often cause unpleasant disappointments. So, if you wish to try it, better make an experiment upon a small quantity of fruits and honey."

The best method of preserving fruit is the method of sterilization in use at the present time. It is a tested process and many households use it with success."

We are glad of this criticism, for we have had reports of failure and do not wish our readers to follow the Braun suggestions too freely.

HIVING CAGED BEES

By G. C. Greiner.

AS I have had some experience in handling package bees ever since that style of buying and selling bees became such an important feature in modern beekeeping, I was more than usually interested in the two articles by Messrs. Dalton and Floyd in the New Year's number of the American Bee Journal, page 27. It is safe to say that in all our bee work, connected with honey production, no two men perform the same operation in exactly the same way. Each one considers his way, which he has practiced for years, the only right and best way, and I mistrust, that applies to myself as well as to anybody else. It is therefore not my object to set myself up as a pattern for others to follow.

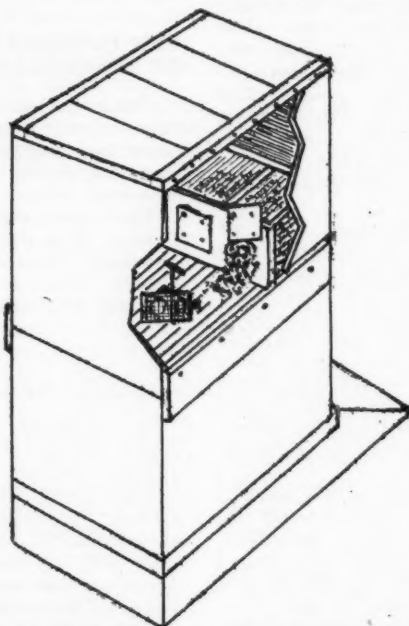
When I read in Dalton's article, "I got stung once in Oregon on a hundred of those and I defy the beginner this side of Jordan," etc., I could not prevent a slight smile creeping over my countenance. It is very evident Mr. Dalton overlooked the first and most important part of the program: "gorge your bees with sugar syrup before the operation." This has the effect of making your bees docile and harmless; it prevents dealing with angry bees and getting stung. In all my transferring, which dates back eight or ten years, when package bees came first into the market, I never had hands or face protected in any way; from the time I took them from post or express office until the opening of the hive next morning, I never encountered an ugly bee or received an intended sting. From cage to hive is one operation of the beeyard, if rightly performed, that offers the least chance of getting stung.

The main point of making the transfer from cage to hive speedily and uninterruptedly is to have everything ready for the operation. The hive, reduced to four or five frames of foundation and the remaining space taken up by division boards, should be placed, with entrance closed, on the stand the colony is to occupy. These division boards are of the same thickness as the space a comb plus a bee space occupies, so that the removal of one of them just makes room for a comb. Changing them, one at a time, is done when the colony increases and needs more room, and this is continued until the hive has its full number of combs. Drawn combs, with a small patch of brood in the center and some honey, at the time the transfer is made, is greatly preferable to foundation; it almost doubles the yield of surplus honey and eliminates all trouble of feeding.

An empty hive body without bottom-board, but with a strip of overlapping lath tacked on to keep it in its proper place, is placed on the open hive directly on the frames, and

the removed inner hive cover is used on top. Before the operation is undertaken, the foundation should be sprayed or sprinkled with sugar syrup, especially in the middle, where the brood nest is to be started.

To prepare the cage, the outside screen should be removed; this may not be strictly necessary, but it gives a better chance to reach the bees with the feed, and the cages can be more easily handled. All the nails of the square, little covers should be drawn, except one in each upper outside corner, to act as a hinge or pivot later on, when the cage is to be opened. The end of the queen-cage wire, that protrudes from under the little cover of the bee cage and is wound around one of the cover nails, should be freed from the latter and a little stick, 2½ or 3 inches long,



Releasing package bees in an empty hive-body over the frames as described by Mr. Greiner.

fastened near its middle to the wire. The purpose of this stick is to keep the queen cage from dropping to the bottom of the hive when the cage is suspended among the frames, and before this is done a wooden plug, easy to take out, is placed into the opening under the little tin ventilator.

During the time these preparations are in progress, the cages are liberally sprinkled with sugar syrup, and this is kept up as long as the bees seem to be anxious to partake of the feast.

When everything is ready, the actual transfer may be accomplished without fear and trembling, in the following way: Lay the cage flatwise, with hinge nails up, on the frames of the prepared hive; either end of the hive will answer this purpose, but

place it as far back as the hive body will permit to allow all the open space available for the manipulation of the queen cage; swing the cover, under which the queen cage is indicated by the wire, carefully around until the cage opening is nearly all exposed. While doing this, the bees that had clustered on the underside of the cover are being scraped off and dropping down, some of them onto the tops of the frames, from where they at once begin to crawl down between the frames. Next, by means of the little stick, pull out the queen cage. (Mr. Dalton calls this "fish out.") Do this very slowly; first, to keep the bees good natured, and, second, to bring out all adhering bees and as many more as possible, which also follow up the first consignment down the frames.

Sometimes it happens that the little queen cage catches under one or the other of the strips nailed crosswise to the bee cage on the inside as a clustering support for the bees. Putting the wire in different directions alternately will always dislodge it; this is my experience.

Making the change from the little tin ventilator to the wooden plug, mentioned before, is next in order. To do this conveniently and without exciting the bees very much, the little queen cage is stripped of its adhering bees; a little quick jerk will dislodge the most of them, and the few remaining ones that may be in the way can be brushed or pushed aside with the bare finger; they are as harmless as so many little kittens.

After the queen cage is suspended between the frames, the other little square cover is also swung around like the first; this gives the bees another passage from the cage to the hive and scatters a few more onto the frames. Covering up the hive body with the inner cover, the actual transfer is practically completed, at least as far as the operator is concerned; the bees will do the rest. Next morning, when the hive is opened, the hive body and bee cage removed, the queen liberated, etc., all little finishing touches connected with the main operation, the cage is generally deserted and the bees found quietly clustered in the hive around the queen cage.

In regard to introducing a queen, Mr. Dalton says: "And a queen dangling around inside that basket in another cage for me to fish out and introduce, after trying to get the bees inside a hive," etc. It seems like a puzzle to me why Mr. Dalton should have any trouble to introduce a queen. After traveling four to six or more days with her bees, sharing all the hardships of the transit, she is already introduced. Years ago, when I first began to handle package bees, I did it, with the exception of a few minor changes, in the same way I do today. Formerly, when I had opened the bee cage and had the queen pulled out, I opened her cage at once and let her run down the frames. Of course, I lost a queen once in a while, the same as I do

now, but it was a great exception. The reason I changed that part of the program somewhat is because now and then a queen would find her way back into the large cage, where I would find her contentedly clustered with her bees next morning. Confining her below draws the bees from above.

A few hints on feeding, in connection with the above described branch of the bee and honey industry, may be appreciated by the beginner, who has to resort to foundation as part of his transferring outfit:

I aim to have my package bees arrive and do my transferring when the honey flow from early fruit trees is at its best. In this locality this period lasts generally from the beginning of May until the 8th or 10th, and is then followed up with a heavier flow from apple tree and dandelion bloom, both flows coming in about the same time. Under favorable weather conditions it is hardly necessary to resort to feeding during this period, except for a few days and nights, or perhaps a week, right away after the transfer is made, to assist the bees in drawing out foundation and getting an early start in brood rearing. But after the two honey flows, during the two or three weeks of honey dearth that generally follows, it is necessary to feed moderately but regularly, until the white clover flow begins; this is essential to keep up brood rearing. It is "combs full of brood" more than "hives full of bees" that forces the honey into the supers. After the white clover flow has once started, no more feeding is necessary. The sweet clover generally fills out the gap between the white clover and the buckwheat and fall flowers.

These directions are adapted to my locality and cannot be followed indiscriminately; different localities, climate, honey flows, atmospheric conditions, all or any of these may require more or less deviation. Each operator has to make the changes according to his own judgment.

For bee feed I always use sugar syrup, half and half, with the well-known vacuum or suction feeder. In my opinion, the former is more stimulating than thick honey in the comb and positive proof against disease, and the latter is, with my improvement, the most convenient, time-saving appliance for that purpose.

The accompanying illustration represents the entire outfit of the operation, as the different manipulations are in progress. One of the little square covers is swung around, opening the passage and allowing the bees to leave the cage. The queen cage is pulled out, supplied with the wooden plug and the little stick in their proper places, is ready to be suspended between the frames.

The question, "Is the purchase of package bees a paying investment": I can unhesitatingly answer in the affirmative. Without going into details, I can state, based on past experience, that a revenue from one to

two hundred per cent on the investment can be easily obtained in about six months, if conditions are half-way favorable.

La Salle, N. Y.

(The editor fears that Mr. Greiner, in the above excellent article, has misunderstood the meaning of Mr. Dalton's words in the expression: "I got stung once," simply because Mr. Greiner, who is a foreigner like the editor, does not understand the slang

words used in this American country. By "stung," Mr. Dalton undoubtedly meant "tricked, outwitted, gulled," for he is well acquainted with the handling of bees. But our old friend, Mr. Greiner, nevertheless gives excellent advice in his easy and steady method of explaining how to do, and it behooves those who are not used to handling bees to heed his advice.—Editor.)

ORGANIZING A COUNTY ASSOCIATION TO FIGHT BEE DISEASE

How 125 paid members, two local bee inspectors and a slight increase in the state bee inspection appropriation were secured within six months

By Samuel Cushman.

Mr. Cushman, who was the instructor in beekeeping at the Rhode Island College of Agriculture, as well as the leading beekeeper in that state more than thirty years ago, gives here a detailed account of the activities of the Cook County, Illinois Association, of which he was formerly the president. In this account of the work of one local association, will be found numerous suggestions for others who wish to attempt a program of practical work.

money was available had to be spread so thinly over the state that it did not check the advance of the disease, just temporarily relieved it in spots.

Organizing County Association

The pre-war pay per day for deputy inspectors, about one-half the present day pay for common labor, had not been changed. The chief state bee inspector was helpless without men and money. This in a state from which the Dadants and Dr. C. C. Miller had, for fifty years, been teaching better beekeeping to the whole world. The beekeepers of the state had apparently taken no concerted action to change conditions for some years.

Existing Associations

The Illinois State Beekeepers' Association, receiving yearly help from the state and meeting for two days at Springfield once a year, had 108 paid members and published an annual report including the addresses delivered and a stenographic report of its discussions at their meetings. The old regional Chicago Northwestern Beekeepers' Association, that had for years held a convention of experts for experts, with members from many states, and with no income except from members, was meeting in Chicago once a year. It then had 51 paid members, mostly from northern Illinois and Indiana. The latter affiliated with the Illinois State Beekeepers' Association, paying it 50 cents per member that they might receive the annual report containing the proceedings of both associations. Jefferson County had been recently organized by J. R. Wooldridge, of Chicago (now president of both the Illinois State Association and the Cook County Association), and there were one or two other county associations, I understand.

Cook County Beekeepers Unite for Protection

It was when attending the sessions of the Chicago Northwestern Bee-

FOULBROOD flourished unchecked in Cook County and over the State. Numerous applications for inspection met with no relief. Numberless beekeepers had been driven out of honey production by bee disease. Some had abandoned their diseased colonies without any attempt to clean them up, and left them exposed where they were almost sure to infect all other colonies within reach.

Many who wanted to keep bees would not, for fear of losing them from disease. Others were cleaning up their own and their neighbors' for self-protection. The greater number, however, would not clean up, but destroyed the worst cases to keep it down and tried to get a crop in spite of it.

Those who sold out had to make a great sacrifice, even if their bees were healthy, because of the suspicion of hidden infection. Those buying to make a start were sending out of the State for package bees, to commence free of disease. Bees, hives and fixtures were risky property to own for these reasons.

Inspection Appropriation Very Small

The appropriation for the whole state was not large enough to thoroughly clean up one or two counties if it was all spent on them. What

keepers' Association that several Chicago members decided that local protective action was necessary, and a dozen others were called together a few days later to consider how to organize to educate the small beekeepers and fight disease. Their united strength would command respect and give influence. With numbers their request for ample state bee inspection for this county would be heeded and their bees protected.

It was at first proposed to meet in free halls of the public schools and cover the other expenses by voluntary contributions, to have membership and other privileges free to all. Difficulty in securing the halls on the desired dates in a suitable locality led to the free use of the Chicago Business College hall, located in the loop district, for our meeting, held on Monday evening, February 15, 1921.

Ninety Persons at First Meeting

Our first call to organize was mailed out by Mr. A. G. Gill to his business list of several hundred Cook County beekeepers. One of the promoters had written the notice and put up the money for the mimeographing and for postage. Great pains were taken to use advertising skill in preparing it and the special letter to the city editors of the daily newspapers enclosed with the notice sent them. They were mailed to the editors three days before, and to the beekeepers six or seven days before, the meeting. All the newspapers cordially supported the movement.

We had promised a two hours' feast of beekeeping information free to all interested, before taking up the matter of forming an association having no members' fees or annual dues. All were urged to come and help make Cook County Safe for Beekeeping.

At 7:15 o'clock, the evening of the meeting, the school room, seating about 40 persons, had no standing room vacant, and by 7:45 an overflow meeting of about 45 persons was in session in an adjoining room. At least 90 persons attended. All were asked to leave their name and address and number of colonies kept. Several experienced men from other states in the city came in and took part. Off-hand talks and answers to questions made this meeting very interesting to beginners, at least. No organization was attempted that evening.

Other Evening Meetings

The March meeting was held in a large paid hall at the Great Northern Hotel. The announced attraction for this second meeting was the western producer of a 24-ton crop of alfalfa honey (who gave his experience in answer to questions prepared beforehand), to be followed by the election of officers. This drew the largest attendance of the year, probably 150 persons. In the announcement we gave a glowing account of the last meeting. This plan of describing the last meeting and making the most

possible of the attractions of the coming meeting was afterward followed in all notices. It was then voted to have a membership fee of \$1.00 per year.

Three experienced members did the talking at the April meeting, after which the constitution and by-laws were considered and adopted. An evening meeting in May, devoted entirely to foulbrood, was well attended. Chief State Inspector A. L. Kildow and Dr. T. A. Kragness, local inspector, did the talking, and the latter passed around combs containing foulbrood, that all might see and smell the characteristic odor. This drew many who had not come before, and new members were secured.

A large proportion of our members were inexperienced small beekeepers who could not attend a day session and who had never joined a bee association before.

Apiary Demonstrations

While our apiary demonstrations were probably the most valuable, many were unable to attend them on Saturday afternoons. One was held in June at the 50-colony apiary of A. G. Smith in the forest preserve, with a program for beginners, using smokers, opening hives, rearing queens, etc. Early in July another was held at an 80-colony apiary out near Dunning Hospital, with 61 in attendance, where the rearing of queens in upper stories, extracting by electric power and the packing of long rows of hives in winter cases was explained. The foulbrood clean-up demonstration, held late in July, at an apiary at Ninety-third street and Southwestern avenue, was given by Chief Inspector Kildow, assisted by the two new local inspectors just appointed. This was watched with great interest. The attendance was the largest of the four apiary meetings. In November a demonstration of packing bees for winter was called too late, but a fair number braved the cold and visited the two different apiaries. We would send a note or phone city editors of the newspapers, inviting them to send a reporter and photographer to the demonstrations.

A Combination of Features

We aimed to combine in our eight meetings during the year the most desirable features of bee classes and clubs for beginners, summer field meeting and the attractions of the yearly conventions. This strenuous campaign was designed to run up a large membership quickly and have the public take notice. One or two meetings would have left us with but 25 or 30 members. It was the continual drive for members that gave us 118 early in July and 125 paid members before the November meeting. Long envelopes with the announcement in black letter covering one-half of the front were used to enclose notices of the most important meetings, to command prompt attention. Sealed letters with 2-cent stamp were always used in sending

notices to keep them out of the waste basket.

Held to Program—No Time Wasted

We have tried to avoid the familiar faults and drawbacks of the bee clubs and conventions. No papers have been read at any of our meetings. Face to face talks with no lost time and fast action has been our aim. No speaker has ever failed to be there and all programs have been put through at the time announced, no matter how few had arrived, with one exception. We assumed that time is valuable to a Chicago audience and it should be well filled from first to last to make everyone want to come again. Discussions of interest to only a few were cut out until the program was over. Association business has never preceded the educational feature but followed it. Intermissions for getting acquainted and exchanging ideas have been provided for between addresses and unlimited time given after the program.

Attracting Attendance

Reception and introducing committees and a committee to solicit members have greatly aided our success. We have gone the limit in our announcements to arouse interest in the speakers, told who they were and what they had done, etc. We have depended greatly on the newspapers for help, and most of them have responded except when the auto show or the radio or live stock show has made space too scarce and newspaper men too busy.

Interested the Public and Aroused the Beekeepers

Noting the interest in bees, city editors sent over reporters for a story, and they were shown attractive apiaries where they took photographs. These illustrated articles in the newspapers and the repeated accounts of the meetings helped the public to appreciate the fact that there was such an industry in the state and stirred up beekeepers over the state. As Chief Inspector Kildow said, they read about it in the papers down there and said, "The beekeepers up in Cook County are having a great time at their meetings."

Such a campaign required much thought, prompt action, a lot of work and the whole-hearted co-operation of the members.

Our Plea to the Appropriation Committee of the Legislature

We had been organized several months when we realized, just before it was too late, that the State Legislature of 1921 would adjourn for one whole year, in July. On the strength of the large Cook County membership, Mr. A. G. Gill, our Secretary-Treasurer, wrote asking the Appropriation Committees of the House and Senate to increase the bee inspection appropriation and the

pay of deputy inspectors, and this was done. The increase and that for the two-year period was slight, about one thousand dollars, but it was an indication of what could be done and gave all new courage to work for what was needed.

The Second Year's Campaign

As the State Legislature would be adjourned for one year, there would be no chance to ask for another increase that year and we felt compelled to keep up our campaign and maintain our membership and try to create an overwhelming sentiment throughout the state for an ample bee inspection appropriation. We followed about the same plan with more prominent speakers.

Exhibit at County Fair

At the request of the Chi-Cook Agricultural Fair, held at Maywood in August, we made sure they had an exhibit of comb and extracted honey, bees and queens in glass hives, and a swarm of bees clustered on a limb in a wire-cloth cage. A large sign in the rear invited visiting beekeepers to join our association, and a few did.

As we had come out a little behind on finances the first year and desired to affiliate with the Illinois State Association at 50 cents per member, to insure our members receiving their annual report and monthly news letter, we increased our annual dues to \$2.50 per member. While many of our 1921 members did not enroll at the increased rate, we did secure 100 at \$2.50 and met all the expenses of our campaign.

In 1922, Mr. M. G. Dadant, the new secretary of the Illinois State Beekeepers' Association, launched a very active campaign to organize county associations, arouse the beekeepers of the state to action, furnish information to members of the legislature and the press in favor of the larger bee inspection appropriation and secure an instructor in beekeeping at the University of Illinois. In Cook County we appealed for assistance to the Chicago Chamber of Commerce and the Illinois Chamber of Commerce, which took prompt action. We also appealed to the Illinois Agricultural Association, to the newspapers, to the farm journals, to our representatives in the legislature, to the Illinois Horticultural Society and the Illinois Fruit Exchange to use their influence to assist us. We also called a mass meeting of Illinois beekeepers in Chicago, in January, 1922, to petition the legislature. All present signed petitions; they were circulated afterward and a list of over 300 names was sent to Springfield.

Substantial Increase Granted.

In face of the great demand for less taxes and legislative economy, it seemed doubtful that even the combined influence of the Illinois State and all the county associations would secure for us the \$24,000 asked for, for the two-year period

(\$12,000 per year), but the legislature did grant about \$14,000, or \$7,000 per year, about two and one-third times what was previously available. This gives us a responsibility for the best use of this money and encourages us to keep up the effort until we have secured a really adequate appropriation.

The Dream Came True

The "I WILL" spirit of Chicago to do the impossible made the dream of a strong beekeepers' association in Cook County come true. The dream of Illinois beekeepers of an ample bee inspection appropriation has partly come true. But the dream of Cook County cleaned of bee disease is still a dream. The extra money was appropriated and the inspectors appointed so late in the season that very little inspection was done in this county last season. We are working for and expecting a thorough clean-up of the whole county next season by means of a quarantine against bees from outside and a whole time chief county inspector, with many local assistants, who will start in early.

The California Plan

Possibly we might have secured relief for Cook County alone easier and quicker by asking the state to pass a law like the one California has had for twenty years, which gives each county authority to handle its own bee inspection, to appropriate its own money and appoint and remove its county inspector. The inspector is responsible only to the county supervisors and to the county beekeepers. Counties where there is no bee industry require no inspector. County ordinances to compel registration of all colonies and prevent moving bees in without inspection, and a clean bill of health, can be promptly passed and strictly enforced. It is up to the county to look out for itself. One California county has an ordinance inflicting a penalty of \$500 or one year's imprisonment, or both, on beekeepers failing to furnish the inspector with the number and location of all their colonies. There is no state inspector in California. Whether this plan would work as well in Illinois as in California is a question.

Making Progress

The Illinois State Beekeepers' Association now has 700 regular associate members, and there are now over twenty-five county beekeepers' associations in this state, nine of which were organized by J. R. Wooldridge. The University of Illinois had no instructor in beekeeping in 1921, had one in 1922, and now has two.

Drawbacks

Has everything gone as smoothly as this sounds, with the Cook County association? By no means. We have struck most disconcerting obstacles and met puzzling complications that

nearly stopped our campaign, but they have been overcome in some way. Probably fifty first-year members, mostly beginners, dropped out when the annual dues were raised from \$1.00 to \$2.50. Our parliamentary procedure has been extremely informal and deserved criticism, but we have muddled through. Probably many became tired of the constant urging to attend, to help, and of the length of the campaign. Those who made the appeals may have been still more tired of making them, but they held on. All of our officers and workers have given their services free. None have received any money compensation. Members' fees have been our only income.

Conclusion

The most important aids to our success have been:

Well considered and frequent newspaper publicity; frequent educational meetings; always keeping our program promises to the audience; the cordial co-operation of the members and all who understood the movement; careful attention to details at the right time.

Chicago, Dec. 24, 1923.

HONEY NOT A STAPLE

By L. W. Parks.

I am really at a loss to know why there isn't a greater demand for honey in the western cafeterias. While out there on a five weeks' trip recently, I inquired for honey at all the cafeterias I visited, but was unable to secure any in a single one. In one of them I was informed that they had had some downstairs, but after a search for about ten minutes none was located. I have also asked for honey in the Chicago cafeterias, and the only one in which I can secure honey is at the Ontra, on Wabash.

Now, of course it could happen that the cafeterias I visited were merely out of honey, but I am inclined to draw my conclusion that the public demand for honey is not great and that most people prefer jellies, jams, preserves, fresh fruits, etc.

I do think that honey is a better food than jams, jellies or preserves, and that a great liking for it by the public could be stimulated by their seeing it attractively displayed on the cafeteria counters.

Air-line (extracted) was the only kind sold at the Ontra, and the price, I think, is about 30 cents for two ounces. I think this price is too high for this small amount of honey, and it should be bought by the case in bulk and rebottled or placed in saucers, thus serving it at a much lower cost.

If every beekeeper and everyone connected with the industry would make it a point to ask for honey whenever he visits a cafeteria, I am certain that the cafeterias would stock up with this splendid food, and, furthermore, that the public would be attracted to it. Possibly you could run a slogan, for example: "Have you asked for your honey today?"

EVERY STEP IN TRANSFERRING BEES

A Picture Story Showing How to Remove Bees From Logs or Boxes and Establish Them in Movable Frame Hives

By C. P. Dadant and Frank C. Pellett

MANY people consider the transferring of bees from either boxes or gums, as a mussy job. Well, it is a mussy job, if you try to do it in the open air, with the bees still on the combs, and a lot of honey in them, especially if it is fresh honey.

But if you remove the bees from the box, and if you do the job at a time when there is the least amount of honey in the hive; early fruit bloom is best; you may do it without difficulty and save all the worker brood. When the bees are actually harvesting honey from the fruit bloom is the best time, though we may wait till the clover crop is on.

Bees may be driven from any box, by drumming, if the weather is warm and the sun shining. If drumming proves insufficient, smoke will finish it. Smoke must be used to begin with, anyhow. Remove the gum or box from its stand, put in its place a decoy box; the barrel shown in Fig. 3 was used because the gum had its opening at the top. But this is rare. Usually the opening is at the bottom. So when you put another box on the stand the bees go to it readily.

Set up your gum or box, with the open end up, and set an empty box upon it, so the two match; if they don't quite match, use some sort of gunny sack to close the open space, for bees will move best if they do not have to pass in an open space. Drum the gum vigorously. In a very short time the bees will hum and begin their ascent. It is very important that the queen should vacate, for her life is valuable at this time. If drumming does not drive them fast enough, cut a hole at bottom and

smoke them up.

When the bees are driven into this upper box, set it down in place of the decoy. You will then see the field bees happily fanning at the en-

remaining in it may be jarred out by giving a couple taps of the gum, upon the ground, covered with a cloth, in front of the hive, as in swarming time.

Now carry this gum, almost entirely free of bees, into the honey house, or any convenient room. Bring to it also the hive to be their intended abode, with all its frames. Split the gum open, with an ax, a chisel or any convenient tool. We used to have a set of tools purposely for this, a saw blade mounted in the shape of a knife, with a sharp cutting end, a bent blade for cutting the combs out at the bottom of the box, etc. But these are not so important in these days of progress, for gums do not exist by the hundreds as they used to do.

When the gum is opened, remove the combs of brood and fit them on a table into frames prepared as in Figs. 4, 5 and 6. We used to make special wires, bent at right angles about a half inch on each end and to drive into the wood of the frames, instead of wrapping the ends as in the cuts. But the modern way of making thin bottom-bars has made these less convenient. So you may bend wires over as is shown in the cut. Baling wire will do, as it is found anywhere. But a better job may be done with steel wire, which retains its firmness. If the pieces of comb are small you may add light wires or straws laid crosswise. We never allow a piece of worker brood to be wasted. But we discard all drone comb or crooked comb.

Some people use strings wrapped around the frames. They will do, but do not hold the combs so firmly



Fig. 1. Section of hollow log containing colony of bees to be transferred.



Fig. 2. Splitting the log to get at the combs.

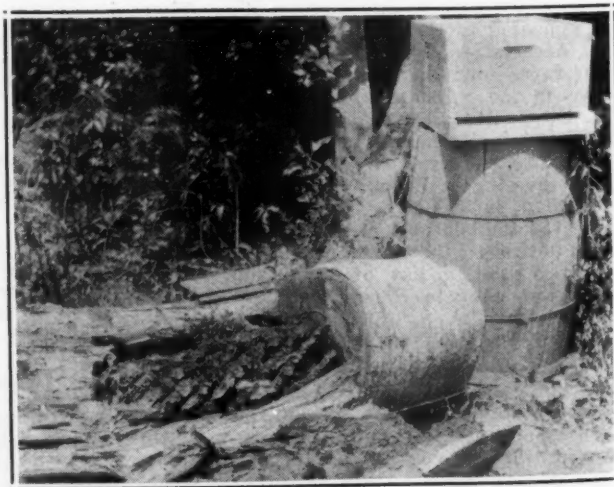


Fig. 3. The log split open, with combs exposed.

as wires. The bent wires driven in the wood, at top and bottom, are also much more readily removed than any other appliance at the end of a week or so, and are fit to use over again.

Where the combs have been rounded off by the bees, in the gum, showing cells on the end, it is necessary to cut them back an inch or so, so that they will not fail to finish them properly by attaching them to each other and to the sides of the frames. A well transferred comb should be almost as even as a sheet of comb made from foundation. Of course the average gum will not furnish you more than enough to fill 6 or 7 frames. The balance must be supplied with comb foundation.

As fast as the combs are transferred the frames containing them are hung into the hive. If there is any leaking honey, it has been our custom to use a temporary bottom-board until ready to carry the hive to its stand. In this way we give no chance for robbers to get at the sweets; the hive is brought out, put upon the stand, and the swarm is shaken in front, just as we would do in the hiving of a swarm in the natural way. Robbers have had no opportunity to find any leaking honey, there has been no crushing of bees in any way. The writer cannot countenance the crushing of bees in bee work and one can very well avoid it.

Transferring seriously disturbs the affairs of the colony; yet if there is no robbing, it takes them less than a week to repair all damage. Very old and crooked comb and drone comb are done away with, so

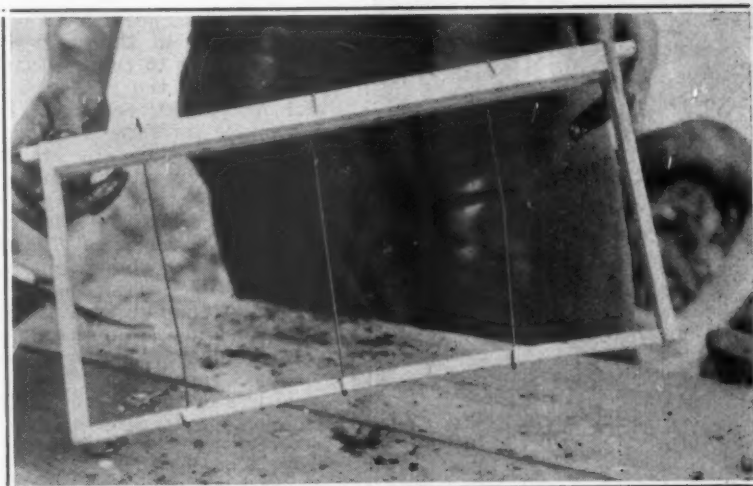


Fig. 4. Frame prepared with wires to support the comb until the bees can attach it to the wood.

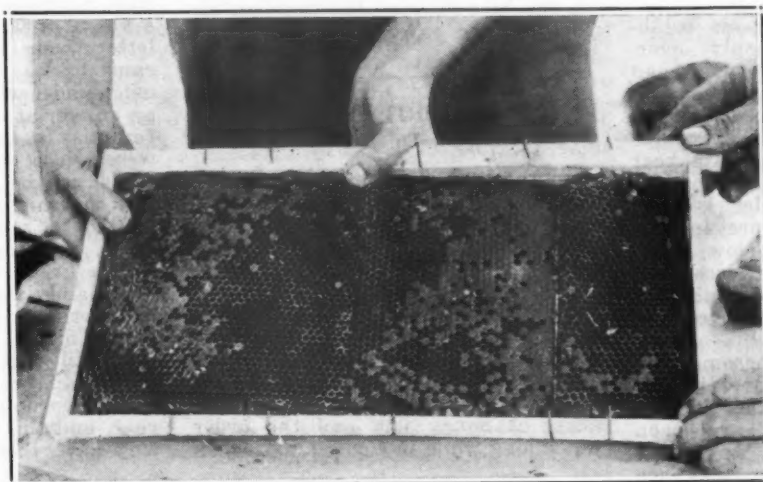


Fig. 5. Fitting the comb into the frame.

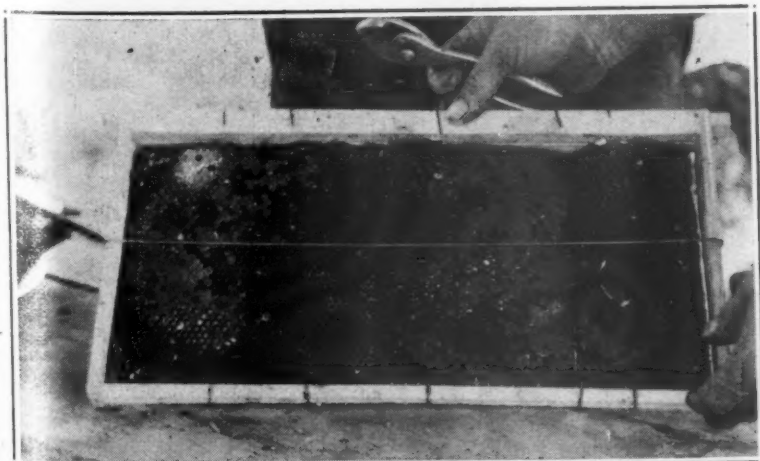


Fig. 6. Transferred comb ready to return to the bees. When the combs have been attached to the wood the frames should be lifted from the hive and the wires removed.

they are benefitted in this way. Contract the entrance if there is any show of possible robbing.

When all the good combs have been placed in frames and put in the hive, a queen excluding zinc should be placed above the hive body and an empty super on top.

All combs containing bits of worker brood or honey should be placed in the empty super to be cleaned up by the bees. If there is a good honeyflow on, it may be necessary to lift off this

super of scraps and place a super of drawn combs under it for the purpose of providing the bees with storage space for incoming honey. Figure 7 shows the hive containing the transferred colony on top of the barrel back in its former position. The super contains the scraps of combs of honey and brood already described. As soon as the brood has emerged and the bees have removed the honey these scraps should be removed entirely. Sometimes during a good honeyflow the bees are very slow to clean such combs, and as fast as the brood emerges the combs should be melted in a solar wax extractor.

Transferring Without Combs

Where it is not desired to save the transferred combs it only becomes necessary to get the bees established in the new hive by the shortest method. To do this the new hive is filled with full sheets of foundation, or better, drawn combs if they are available. The top is removed from the

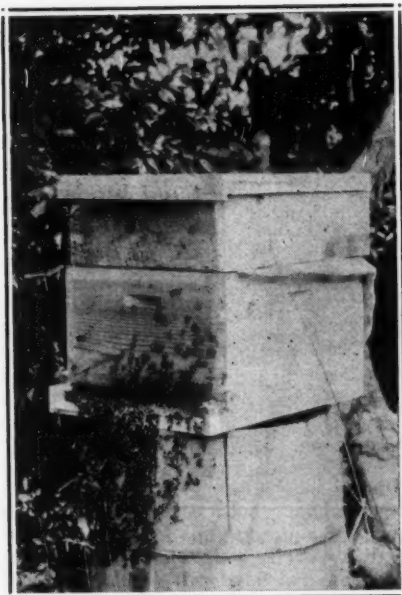


Fig. 7. Transferred colony in hive where the log formerly stood.

box in which the colony is established or the box simply overturned, and the new hive placed on top of it. The bees are driven upstairs into the new hive by drumming on both sides of the box with heavy sticks and continuing to beat until most of the bees have gone above. A queen excluder is then placed over the box to prevent the queen from returning below again and the bees left to themselves until the brood has emerged from the old brood nest. It is then removed and the combs melted up.

In the height of the season, when there is a big force of bees it is a common plan to remove the old hive entirely after the bees have been driven into the new one. As fast as the young bees emerge they are shaken in front of the new hive which remains on the old stand, and thus join the old colony in the new home.

Figure 8 shows combs built in a box in such a manner that the top of the box cannot be removed without destroying them. In this case a frame of brood is taken from another colony and placed in the new hive. The rest of the frames are filled with full sheets of foundation and the hive is placed where the box formerly stood. The bees are then shaken or smoked out of the box in front of the new hive, as shown in Fig. 9. Care is necessary to make sure that the queen goes with the bees into the new hive. A queen excluder is then placed on the new hive to prevent the queen going upstairs and the old box is set over the hive to remain until all the young brood has emerged, as shown in Fig. 10. After about three weeks the box is removed as in the other cases. In a good honey flow it may be necessary to lift the box above a super to prevent the bees filling it with honey, as in the case previously mentioned.

Conditions Which Insure Success

Nothing has been said about smoking the bees at the start to enable the beekeeper to control them. It is assumed that the reader is familiar with beekeeping practice. By blowing smoke into the entrance of the hive or box the bees are demoralized to the extent that there is little tendency to sting.

For the benefit of the novice it may be well to repeat for the sake of emphasis the important points to be observed. Transferring should not be attempted when there is no nectar coming from the fields. The work should be done on a warm day.

Great care should be used to avoid loss of the queen. With a laying queen a transferred colony will restore normal activities in a surprisingly short time.

Clean up all odds and ends of honey and wax and replace the new hive in the same position formerly occupied by the colony to avoid the confusion of the returning field bees.

Place bits of comb containing honey or brood in an empty super on the hive to give the bees an opportunity to save everything possible.

MORE ABOUT PACKAGES

By L. T. Floyd.

In the discussion on package bees in the January issue, I am pleased with the light thrown on the subject by Mr. Dalton, but there still remains much to be said or written on this matter.

First, he states that most of the kicking has been done by the buyers. Why not? I remember an incident in my early beekeeping experience when I sent the cash for ten gross of honey jars and the order was a long while in coming, and when

it arrived it was not what I expected. Later, in delivering an order of honey to a grocer, I happened to mention this to him, and he came back with the reply: "Well, you know the fellow who pays for a thing before he gets it and the fellow who never pays at all are in about the same class; it is poor business." I have pondered a lot over this statement and have thought of it several times in connection with the package business. The shipper always has the money before he ships and can deal with the buyer as he sees fit. He has the buyer at a very great disadvantage and he thus forces him to be the kicker.

Last season an old man, a foreigner, who had recently come to the province, sent \$90.00 to a shipper in the south for bees. He looked over the list of shippers advertising in one of the bee journals and chose the lowest priced offer—a very unwise decision. When the shipment arrived, only two packages were alive. He, because inexperienced and not understanding the language very well, accepted the shipment and had a neighbor write the shipper. Three letters were written, but no answer came back. He then came into the office and I wrote the parties, getting an answer at once. But this was different. In the first place, the bees were sold at so low a price that they could not be replaced without loss, and the shippers evidently never intended to replace. In the second place, the shipment was lost, which was a great waste, and the reason was plainly attributed to carelessness or ignorance on the part of the shipper. This old man's money was lost. It is still lost as far as he is concerned and he can ill afford it. He has the promise of more bees next year, and this reads fairly good, but why have these people the right to



Fig. 8. Box turned over to show irregular shaped combs built without foundation. As soon as brood has emerged these combs will be rendered into beeswax.

hold his money? It is not his fault that the bees were dead.

Mr. Dalton, whether intending to or not, "passes the buck" to the expressman. Just a word in behalf of the expressman. Our experience with him impresses us with the fact that no individual connected with this work displays quite as much interest as the average expressman. He is continually wondering where all those bees are going and what becomes of them. He is forced to be interested, as by the time these shipments are on the train two or three days a package here and there will develop a leak and Mr. Expressman often finds himself with a few sore spots to scratch for two or three days after the shipment passes.

Mr. Dalton's write-up indicates that he believes the baggage or expressman was anxious to give the bees the proper attention and gave himself no end of trouble to make the bees comfortable, but erred through ignorance of the requirements. I wonder if he knows that the express companies have an excellent magazine, entitled *The American Express Messenger*, edited by Stanley W. Todd, 41 Trinity Place, New York. This magazine is devoted to the education of their employees on lines such as these. Besides, they have a department whose function it is to publish and circulate bulletins among the employees on all such subjects. This work is superintended by J. H. Butler, manager, Loss and Damage Department, American Railway Express, 51 Broadway, New York. I would like to suggest that Mr. Dalton or some other shipper would make it his business to supply these parties with the necessary write-ups and illustrations to provide the wherewithal to get these ideas across. I know that these parties will be delighted to give him service along these lines.

Canada.



Fig. 10. Box placed on top of hive to remain until brood emerges. The queen is in the hive below.

(It is important in cases like this that the person receiving the bees should have the express agent make a note on the express bill to the effect that the bees arrived in bad condition. Failure of the receiver to do this robs the shipper of his protection, as in case the loss is through carelessness of the carrier the value can be recovered from the express company. Every shipper of package bees should impress this point in his correspondence. If the express bill shows the condition of the bees on arrival, it is much easier to make a settlement with either the express company or the shipper.—F. C. P.)

Another New Bee Book

"Queen Rearing Simplified" is the title of a new book on queen rearing

written by Jay Smith, well known queen breeder of Vincennes, Indiana, and published by the A. I. Root Company. Price, \$1.25.

In this book Smith takes the reader to his queen rearing yard and explains step by step his method of rearing queens. He makes no attempt to describe all methods of queen rearing, but is content to describe his own, with reasons for each operation. Smith is evidently a close student of bee behavior and discusses at length the various operations necessary for queen rearing, and tells why they are likely to succeed.

One chapter of special interest deals with the introduction of cells to the nuclei where the young queens are to emerge and from which they will later make their mating flight. On page 65 of "Practical Queen Rearing" special emphasis is placed on feeding sugar syrup freely at the time of giving newly grafted cells to the starting colony. Smith goes a step farther and feeds his nuclei in similar manner. He argues that feeding the bees liberally, so that they will be gorged with sweets, will greatly increase the percentage of acceptance of the cells.

This book is in no sense a rehash of previous books on queen rearing, but is a distinct contribution to the subject.

Bees on Goldenrod

We have great quantities of hairy goldenrod here. I have watched it for years without seeing a bee on it. Last fall it was the same until we had an unusually cool night, when the temperature went down to 40 degrees. The next day the bees were thick on the goldenrod. The same thing happened the following night, with like results the next day. Then it warmed up again and no bees on the goldenrod afterward.

J. R. Schmidt, Cincinnati, O.

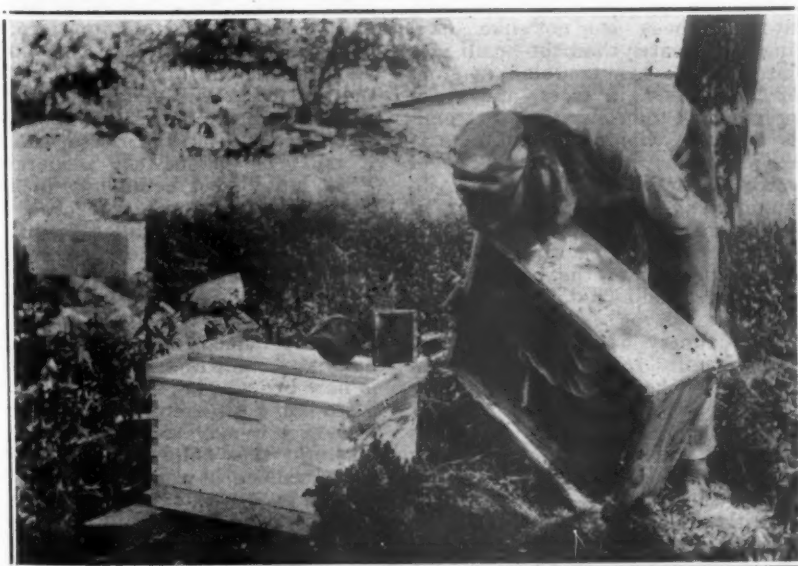


Fig. 9. Driving the bees from the box into the hive standing in its former position.

NATIVE AMERICAN BEES

So many references have been made to the native American bees that several of our correspondents seem to be fully convinced that the honeybee was found in this country by the early settlers. There is no evidence to be found in support of this theory. Careful examination of all these old references show very clearly that the stingless bees or other species common to the tropics are referred to. Through the kindness of E. M. Cole, of Audubon, Iowa, who has loaned us a copy of the book, "Treatise of Political Flying Insects," by Samuel Purchas, which was published in London in 1657, we are able to present to our readers the text in full which refers to American bees. This author describes in greater detail the sources of the honey and wax of the new world than do many writers quoted. Chapter XXXII of the book reads as follows:

A Treatise of Political Flying-Insects

By Samuel Purchas
London, 1657

Chapter XXXII Of American Bees

"In the West Indies the bees are small, about the bigness of flies, or somewhat greater, and the points of their wings cut overthwart, and have through the middle of the wing, one white line across. They have no sting.

They make great honey combs, and the holes in them are four times greater than the cells of our European bees, although they be much smaller; their honey is good and wholesome, but it is very dark, like wine being boiled.

In the Island of Cuzumel, which is near the coast of Yucatan, there are many hives of bees like those of Spain, but less, and much honey, and wax; the honey is like the Spanish honey, but somewhat sharper.

In the Island of Hispaniola are no bees, that ever I saw or heard of. In the firm land are very many, and of many kinds, as well as in the form and shape of the creature, as also in the variety of the taste and color of the honey, and difference of the wax.

But though Oviedo neither saw nor heard of any, yet are there bees in Hispaniola, but as small as flies, which sting not; their hives are four times as great as ours; their honey is white.

In the Indies are few swarms of bees (he understands domestic bees, which then were rare, but now in many places common).

Their honey combs are found in trees, or under the ground, and not in hives as in Castile. The honey combs which I have seen in the Province of Charcas, which they call Chiguanas, are of a gray color, and

have little juice, and are more like unto sweet straw, than to honey combs. The bees are little like unto flies; the honey is sharp and black, yet in some places there is better, and the combs better fashioned, as in the Province of Tucuman in Chile, and in Carthagene.

In Peru, especially about the City Cartago, are many bees, which breed in hollow trees, and make as good honey as the bees in Spain; there is one sort of bees not much greater than gnats; these stop up the hole, or passage into the cavity of the tree, and by a pipe of wax as great as the middle finger, go in and out to their labors; their honey is thin and somewhat sharp; they get usually about a quart of honey out of a tree.

There is another sort of bees which are somewhat greater, and black (for the former are white.) The entrance into the tree where they work is made up (except a passage for them) with wax, and some other mixture, whereby it is harder than a stone; their honey is without comparison better than the former, and a tree will afford usually a gallon, and sometimes more.

There is another sort of bees which are greater than the Spanish bees, but none of them sting, but when they find that any go about to plunder them, they will charge upon him that cuts the tree, and hang about his hair and beard. These greater bees yield usually three gallons out of a tree, and it is far better honey than any of the former.

In the Province of Guayaquil, which is not far from Quito, they breed in trees, and are not much greater than flies. The wax and the honey which they gather is red, and, although it hath a good taste, yet is it not like to the honey of Castile.

Near the rivers of Vasses and Plate, the bees are not like ours, being not greater than the small flies wherewith we are troubled in summer; they work in trees, and make larger combs than ours; the extremities of their wings are blunt, as if they were cut (Oviedo and Thevet confirm it) or bitten off, and have in the middle of them a cross spot drawing towards white, without stings; their wax is as black as pitch. The honey generally of the bees, of the new world, candies not, but is always liquid like oil.

The country of Mackiasies, 372 Germane miles from the City of Assumption, in the River of Plate (near Peru), is so abundant in bees that you shall scarce open any tree with a hatchet where will not run out five or six measures of pure honey; the bees that make it are very little, and without stings.

Aldrovandus, citing Hispanus, saith that in the Isle of Cumana the swarms hang on the trees, and flow down with honey.

In Tymona, not far from Quito, the Indians make many conserves of honey, which is somewhat plentiful with them, and send them to sell to the countries round about them.

The Indians of Cumana, although their country be well replenished with good bread, corn, fruits and all kinds of fish in great abundance, yet eat bees, lice, spiders, etc.

The Brazilian bees are very unlike to ours, and differ not much from the little black flesh fly, which annoy us in summer, and make their combs usually in hollow trees. They call the honey Yra, which they eat as we do. Their wax is as black as pitch, which they call Petic; they use it not for candles, as we do, but to stop their great Canes, wherein they keep their feathers that they be not eaten by a kind of butterfly which they call Araveis. They come in multitudes to the fire, like crickets, where they eat whatsoever they find, especially they gnaw the upper part of leather doublets and shoes. If we negligently reserved hens, or other food, in the morning we should have only bones.

Several sorts of bees in Brazil: Yeatee is the smallest of all the bees that ever I have seen in the country, and is in making much like a gnat, but of a yellowish color, and hath commonly her honey in the hollow of a tree, either at the root or not above three or four foot from it; it stingeth not, and where they enter, they make a pipe of yellowish wax about four inches long, with the mouth of it like to the mouth of a trumpet; the combs are joined together like clusters of nuts, and their honey is an excellent balsam, for I have had experience of it myself for the curing of very dangerous green wounds.

Zellab and Zellobson are the two chief sorts of bees, and sting not at all; the lesser is so like our bees here in England that I think I should not know one from the other; the other is bigger, but yet much of the same color; they have honey in abundance, and the further up into the country the more plenty; I have seen more taken out of a tree at a time than a firkin will hold, as clear as running water, but if drunken it is exceeding strong and causeth thirst; it must be taken very moderately. They build most commonly in some hollow bough of the tree or else in the body of a tree, called by the Indians Kerauvab; they have their honey in clusters of balls, much like our bumblebees, and their young ones in combs which lie compassed with the balls of honey, and in the balls you shall find some honey as it is new brought in, very thick, yet unfit to eat until it come to be clear as water; you may see in the balls or clusters the color of the blossom from whence it was gathered.

There are two other sorts of bees that are but small, and of a black color; one sort stingeth not, but the other doth. They are very like each to other, and build about the middle of the tree; the honey of them both

is much alike, but not so good as the former, and they are called Erete.

There are other sorts of black bees called Erepnob and Erepnhuson; they both sting, and intangle much in a man's hair; the one buildeth in the hollow of a tree and the other in the branches; that which buildeth in the hollow of a tree will not suffer any man to come within two or three rods of the tree where they are.

I never saw any of their honey, but the natives have told me that they have indifferent store, but it is very laxative, and breedeth diseases in the eater, as bloody flux, etc. The other buildeth in the branches, and make their house of dirt, bigger than one of our large beehives, and enter at the middle of it, their young as it were, in little cells or chambers, and from thence between several layings of dirt they have their honey, which is not very much, but is binding.

There is another small sort of bees, and they either build in fields, where there are but small store of trees, and they but low ones; they are of an ashy color, and build in the branches like Erepnobs, but their nest is like a film, or skin, and of the color of the bee; they have not much honey, and have a thin, flat comb, or else they build among the tobaccoes, and from thence they take their name, being called Tobacava.

In Hispaniola their wasps are greater than ours, and sting more dangerously. There are many of them, and they very poisonous; they cause great pain when they sting; they are like those of Castile, but somewhat greater, and under their wings, above the yellow towards the end, have a little lionlike color. More fully in another place he saith: There are many wasps in the West Indies. They are very hurtful and venomous, and their stinging is without comparison, more painful than the stinging of Spanish wasps; they are almost of the same color, but greater, and the yellow of them is more red, and their wings are spotted with a black color, and the points of them reddish of a burnt color.

They make very great nests, and the clusters of their combs are as large as the combs that the bees make in Spain, but they are dry and white, inclining to russet; they have nothing in them but their young. They breed in trees, and also in the roofs and timbers of houses.

There are many hornets in Hispaniola, and their stinging more torments than the stinging of their wasps.

There are two sorts of hornets in Brazil, which the Indians call Moribundas, the one black and the other much of the color of them we have here in England, but the black is bigger and longer, and stingeth violently. They make their house like a canopy, or much like the top of a beehive, and they are fastened to a bough of a very high tree, so that they seldom offend any man unless they first offend them; but your

herdsmen are sometimes much vexed with them, in driving their cattle, they are unruly many times; they run among some Sippoes or Withes that run into the tree, whereby they disturb them, and then they come down, to the terror of men and beasts. Their house is open below, so that you may stand under them and see them go into a comb that lieth flat on the bottom, much like to our honeycomb."

From the above account it will be seen that several species of bees furnished both honey and wax, which was used by the natives. The description of the bees and of their combs, however, is sufficient to make certain that the honeybee was not the subject of discussion.

The reference which states "the lesser is so like our bees here in England that I think I should not know one from the other," might serve to lead us to believe that it might be the same if he did not explain, "and sting not at all." He also states that they have their honey "in clusters of balls" which are further compared to the combs built by the bumblebees.

There is every reason to believe that the honeybee was introduced into America by the early colonists, as has long been stated in the text books on beekeeping.

Frank C. Pellett.

FOR CLEANING THE SUPER FRAMES

By Roy A. Wiley.

Almost any time now is a good time to get the super frames cleaned up, and if one wishes to make the most of his time, a cleaning box is almost indispensable. Any box about 18 inches in length will do, but the jaws of the frame holder should be 17½ inches apart. This clamp to hold the frames may be constructed as follows: An upright piece, 6 inches

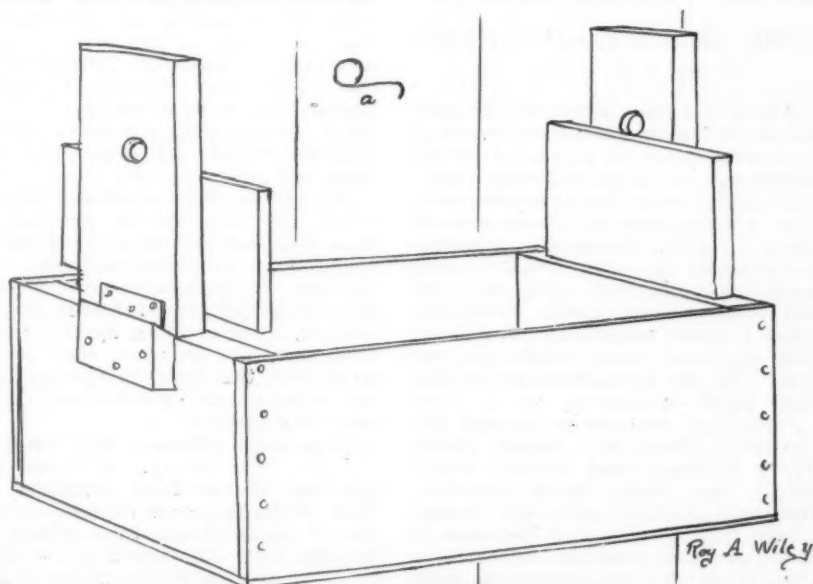
wide, and long enough to project above the edge of the box about 8 inches, is nailed onto one end of the box. Across this a piece of half-inch stuff, 5 inches wide and 12 inches long, is nailed, resting along the upper edge of the box. Then a one-inch augur hole is bored through the upright at the upper edge of the transverse piece.

The other end of the box is fixed in a similar manner, with this exception: The upright, instead of being nailed to the box, is but 8 inches long and is hinged to the upper edge of the box in such a way as to admit the inserting of the frames. A beveled block just below the joint will prevent the hinged piece from falling back.

In use, the box is secured to the wall at such a height that the frame being cleaned may be held tightly in the clamp by pressing the chest tightly against the hinged block. This allows both hands to be used effectively. There's nothing much better in the scraper line than an old case knife. The box catches and saves all the scrapings.

For cleaning the grooves in the super frames, I use a wire bent as shown in Fig. 1A. This wire is ¾ inch in diameter and 5 inches long. The scraper end is squared until it snugly fits the groove and then is sharpened wedge-shape to form a good scraper. A trial will show the best method of using and will convince any beeman of its usefulness.

And while we are about it we must remember to make sure that not a particle of wax is left in the groove. It must be clean to the very ends if we would avoid a waste of time and temper when the time comes to insert the new foundation.



Device for holding frames for cleaning.

COMB OR EXTRACTED HONEY

Relative Advantages of Liquid and Comb Honey as Seen by Extensive Producers

SOME weeks ago we sent a letter to a number of extensive honey producers both east and west with a list of questions regarding the comparative cost of production and relative advantages in the marketing of comb and extracted honey. In our February number we published several of the letters received in reply. A few more are printed herewith.

This subject is more important than appears at first sight, since there is a definite demand for comb honey which cannot be supplied with honey in any other form. In some quarters the fear has been expressed that too many large producers are changing from comb to extracted honey and that some of this market will be lost to the industry as a result.

In addition to the letters published, we have received much valuable information which will be helpful to us in other ways. It is hoped that we may be able to follow the subject still farther and secure more definite information concerning market demands.

Each individual beekeeper must consider what is best for him under his own peculiar conditions. Cost of supplies, available labor and market demands, as well as the character of the honeyflow, must be considered. The man who is located in a region of slow and light honeyflow can hardly expect to be successful with comb honey even though markets might be more favorable.

The views of one well known eastern and two western beekeepers are discussed at length in the following articles:

COMB OR EXTRACTED HONEY

By J. E. Crane.

There is a great difference of opinion as to the desirability or profit of producing comb or extracted honey. There are so many different conditions under which honey is produced, it is a hard question to answer off hand. Again, those who produce honey under the same conditions may hold quite different opinions. My son thinks comb more profitable, while I am at present of the opinion that extracted honey might pay the best. We are both interested in the same yards of bees.

"Locality" may make a great difference. There are many places where raising comb honey would hardly pay, that would produce profitable crops of extracted honey. Under such conditions a decision is easy. Another question of considerable importance in connection with this: How many colonies run for

comb honey can one man care for? How many when used for producing extracted honey?

For many years I kept five hundred colonies of bees in five yards, sometimes more, at other times a few less. Four yards were from three to eight miles from home. I had one man or a boy for help, and one horse. Practically all the work was done in five days. The sixth day was spent in my garden. The seventh day was the Sabbath, when we rested. Aside from moral or religious considerations, I believe more can be accomplished when we take one day in seven for rest. All yards were run for comb honey, a few hives only for extracting. We had to go over a yard once in eight or nine days. Whether one man can accomplish half as much as two working together is an open question. I doubt if he can. Suppose we say, then, that one man of average ability could care for two hundred and fifty colonies when used for producing comb honey, by working six days a week during the busy season. How many could a man care for when run for extracted honey? I don't just know, but judging from our experience in extracting from one yard during the last few years, he could care for more; I should say three hundred colonies. There is much more labor connected with comb honey production than in the production of extracted honey. To begin with:

For two hundred and fifty hives, there must be made from eight to ten thousand sections, if seasons are good; foundation cut up and put in them, and all placed in supers with separators ready for the harvest, while for extracting you have the extracting combs of the previous year all ready to place on your hives at the proper time. During the spring months, the work of caring for both comb honey and extracted honey colonies would be practically the same per colony.

But when the swarming season comes on, then comes the tug of war. With colonies run for extracted honey it is comparatively easy. We can put on food chambers, if they are not already on, followed by extracting supers, lifting up brood into them until the bees lose their desire to swarm; the desire to gather nectar seeming to overbalance their swarming instinct.

It is quite different with colonies run for comb honey. It seems impractical to use food chambers, as when filled, if supers of sections are placed above them, they would be too far from the brood to be filled promptly. Besides, the filling of the food chambers first might prevent

the finishing of the super of sections.

Again, the need of a moderate sized brood chamber, which seems to be required for the best results in securing section honey, also favors the swarming instinct, and a large amount of work is required to keep bees at home and steadily at work in their supers, by removing queen or brood and cutting out queen cells. Even this will not always prevent it.

It would seem as though the work of removing extracting combs would be more per hive than supers of sections, for there is more of it.

From our experience, I should say that the work of extracting honey and preparing for market for a given number of hives would not be more than one-half or two-thirds what it would be to clean the sections of propolis, weigh them one by one, set up cartons and shipping cases, and pack the sections in them. And on top of all this, make crates to hold six or eight shipping cases, before it is ready for market.

The market report for December 1, published by the Department of Agriculture, just received, states that the average price of white extracted honey in the United States for November was 14.3 cents and the price for white comb honey was 21 cents. Assuming we can get 75 pounds of extracted honey where we could get 50 pounds of comb honey, we should realize \$10.50 for our comb and \$10.72 for our extracted honey. But we remember that while our containers for extracted honey cost us a cent and a third a pound, our comb honey has cost us for sections, foundation, cartons, shipping cases and crates or carriers, not far from five cents per pound. If we call the difference $3\frac{1}{2}$ cents per pound more for containers for comb honey, we find our account would stand about like this:

75 lbs. extracted honey	-----	\$10.72
Containers extracted honey	-----	1.00
Net	-----	\$ 9.72
50 lbs. comb honey	-----	\$10.50
Sections, foundations, etc	-----	2.50
Net	-----	\$ 8.00
Net from extracted honey	-----	\$ 9.72
Net from comb honey	-----	8.00
Net in favor of ex. honey	-----	\$ 1.72

We are producing more and more extracted honey from year to year. More than a third of our crop last year was extracted honey. We have a good trade on comb honey and our trade in extracted is increasing. If

we are short of extracted honey, it is much easier to buy extracted honey and sell at a profit than to buy comb and sell again.

Our crop last year was over 30,000 sections, and I should think 18,000 pounds of extracted honey. While we are getting 20 cents for extracted in a jobbing way, we are getting only 27 cents for our best comb. We expect our comb to average 25 cents and extracted at least 20 cents. In small amounts we get 25 cents for extracted honey. Now, if we try to argue the question, I think the man who extracts his honey will come out ahead so far as profits are concerned every time, at present prices, in this part of the country.

I remember very well when D. W. Quinby, a commission merchant of New York City, and a brother of Moses Quinby, wrote the American Bee Journal, not long after the extractor began to be used in this country, begging the beekeepers not to send extracted honey to the New York markets, as there was no sale for it. Today carloads on carloads of extracted honey go to that market without any sign of swamping it.

I believe the demand for extracted honey is increasing much faster than for comb honey, and, farther, I believe it will continue to do so.

If our government stations would try for a time to increase the consumption of honey rather than its production, it might be a good thing. A better method of marketing might be a great help in stimulating the demand for comb honey. When consumers pay from 50 to 75 cents a pound for comb honey, it is discouraging to comb honey producers.

I fear I am multiplying words without producing much wisdom. Vermont.

SURVEY OF PRESENT STATUS OF COMB HONEY PRODUCTION

By a Montana Beekeeper.

The cost of producing a pound of comb honey as compared with producing a pound of extracted under my conditions will probably not apply to very many producers, and is given with the idea of showing the relative cost of the two under the same condition.

According to the figures below, labor cost per section of comb honey is .0083 as compared with extracted, .003, and in figuring these costs I do not believe, if you were to hire the labor mentioned, it could be accomplished for very much less.

In figuring the cost of material, we will take a carload as a basis, and find them as follows:

Comb honey:
1250 double tier shipping cases, retail price 53 cents each ----- \$662.50
31,500 No. 1 sections (in this item I have allowed 1500 sections for wastage, which includes unfinished sections, broken, cripples, etc.)

at \$14.00 per M ----- 441.00
281 pounds thin surplus foundation at 80 cents ----- 224.80

Total material cost ----- \$1328.30

Extracted honey:

250 cases of 60-pound cans at \$1.30 ----- \$325.00

Labor costs for a car of comb compared with extracted:

Putting up sections, 31,500 (one man at \$75.00 per month, figuring 25 working days, cutting his own foundation and waiting on himself), 30 days' labor ----- \$ 90.00

Nailing 1250 shipping cases, 100 in 8 hours, 12 1/2 days; cleaning and grading 30,000 sections, 40 1/2 days; cleaning 1250 supers, 15 days—total days 68 ----- 204.00

Total labor cost ----- \$ 294.00

Extracted honey:

Extracting 30,000 pounds, 1000 pounds per day, 30 days ----- \$ 90.00

Total labor cost ----- \$ 90.00

Difference in favor of extracted honey in material cost ----- \$1003.30

Difference in favor of extracted honey labor cost 204.00

Total on 30,000 lbs. ----- \$1207.30

Prices received for 1250 cases comb average \$5.00 for No. 1 and \$4.50 for No. 2—50% each ----- \$5937.50

Price received for 30,000 lbs. extracted at 9 1/2 c ----- 2850.00

Difference in favor of comb honey ----- 3087.50

Difference in material and labor in favor extracted honey ----- 1207.30

Balance in favor of comb honey ----- 1880.20

In figuring the above labor costs I have figured the cost per carload of each just for labor that it is necessary for me to hire done when producing from three to five carloads of comb honey yearly, and yard work is not taken into consideration, which we figure as follows:

One man can do all the yard work on comb honey for 260 colonies producing on an average three cases per colony, spring overhauling and packing for winter included.

Four months at \$125.00 ----- \$ 500.00
Cost per case, 500 cases at 83c (same cost computed on carload ----- 1037.50

One man to 400 colonies producing 50 per cent more honey:
Yard work as above figured on carload cost ----- 264.00

Difference in favor of extracted honey ----- 773.50

Final difference in favor of

comb honey ----- \$1107.50

In running five yards of 200 colonies each for comb honey, we had to have a foreman at \$150.00 per month, which, on an average production of three cars, added \$600.00 per car, while under extracted honey this cost was eliminated entirely.

Another item that must be taken into account is the fact that in producing comb honey you must have your material ready, with the exception of the shipping cases, before the flow starts, which on above figures means a cash outlay of \$665.00, while under extracted honey I know of large producers who never buy a can until the bees start in the supers, and, if they do buy for a carload, would require but \$325.00, and with the same care these cans are 100 per cent efficient one, two or three seasons afterwards, while with sections and foundation you will have to count 10 per cent depreciation the first year and 25 per cent more the second year, and still more the next.

I believe it is possible for an expert beekeeper (one who can command a salary of \$1800.00 a year) to operate enough bees to produce a carload of honey and do all the work himself, which, according to the above figures, should bring him a revenue of \$4,609.50, and in making this claim I would say I have had just one man out of the dozens I have employed who was able to do that. But you must bear in mind the cost of the equipment, interest, depreciation, taxes, and various small losses, which all count up. Crop failure, no market, or unsatisfactory price have during the past five years made the \$1800.00 salary the better of the two.

On producing comb honey on a large scale there is a large amount of sameness about the work. For instance, it will take one man thirty days to properly prepare sections and foundation for a carload of comb honey, and in a territory where the yields of comb honey are large, swarming gets to be a nightmare. Cleaning comb honey for market is a forty-day job for one man, while cleaning supers, which perhaps is the most disagreeable, is a fifteen-day job.

It is my opinion that 90 per cent of the demand can be filled with extracted honey. In making from two to four fair exhibits yearly, at which we usually sell all our exhibit, we find we can nearly always tell which kind of honey a person will buy, judging by their age. Older people buy more comb than extracted. The children in the families of today have more to say as to what they shall eat than when I was a boy, and in every domestic science department that I know of only extracted honey is used in demonstrating the use of honey. The domestic science pupil of today is the mother of the next generation, and I see no way of bringing comb honey into her education, as it is a prepared food and, as I heard one pupil remark, "comb

honey is no good; all you can do with that is to eat it."

The cost of supplies to produce comb honey, together with the cost of help that is competent to produce comb honey, is too high, and to make a suitable return the present retail price of comb honey cannot be advanced without placing it out of the reach except of the small consumer. Labor is getting to the point where it demands a variation, and to produce comb honey in a large way there is too much sameness to the work.

I find some large producers who prefer comb honey because they claim larger returns than shown above, but in every case I find they do not have to depend on outside labor. One man has a large family and they all work at the crop; low costs for shipping cases on account of an accessible market that does not demand the high priced case; low grade sections, and other interests that bring in some revenue which bears part of the burden of expense, are some of the items.

Comb honey is a perishable crop and must be disposed of in season.

IT ALL DEPENDS UPON THE MAN By M. A. Gill.

I do not think I quite share the alarm, that the markets will be disrupted by so many producing extracted honey. I believe that the law of supply and demand will properly adjust that question, and adjust prices as they were in pre-war times.

During the peak of prices in war times, when extracted honey sold for as much as comb honey, many producers changed to the production of extracted honey because they could make more money when prices were the same, but they are getting back to a just standard of values.

I think the market could be injured more seriously by an overproduction of comb than extracted honey.

In answering the first question, I would say it costs one-half more to produce comb than extracted honey.

Second—While there is much more of the cost of supplies that is lost and goes to market each year in comb honey than in extracted honey, there is not near as much dead property to be carried over in the production of comb. Especially is this true if one carries enough extracting supers to hold his crop, in which case he should have at least six supers of extracting combs. If he extracts as fast as the honey is ripe it takes much help, but he can get along with one-half the combs. But he is carrying over in dead property from \$9.00 to \$18.00 for each colony run for extracted honey, against \$4.00 for five comb honey supers when working for comb honey. Then again he must have an extractor, tanks, melters, etc., when working for extracted honey.

Third—If a man produces 100 pounds of comb honey, his cases, foundation and sections will cost,

say, \$2.75, and he carries five supers worth \$4.00.

If he produces 100 pounds of comb honey, he should, if working for extracted honey, produce 160 pounds. His storage and cases will cost, say, \$1.75, but he is carrying over at least \$15.00 dead property for each colony. In the production of comb honey "preparedness" should be the slogan. Enough supplies should be prepared during the winter for any emergency. My experience has been that I can manage 500 or 1000 colonies with much less hired labor while running for comb than for extracted honey, because the period is much longer drawn out when working for comb honey. If a family is nothing but a liability, I should hate the job of supporting them with bees I could manage alone, but happily my family has been an asset as well as a liability.

Witness: Wife, one son and myself have worked 1200 colonies and produced two carloads (32 tons) of comb honey in one season, with a little help casing honey, and had both carloads on the market by September 20.

I would say if two men equally equipped with ambition, strength and experience would embark in bee culture, one working for comb and one for extracted honey, and neither should buy or sell any bees, for a period of five or ten years, I would expect the extracted man to have produced perhaps a little the most money, but would expect the comb honey man to have the best equipped business and the owner of more bees than his neighbor.

Utah.

THE HUBER LETTERS

My First Knowledge of Bees

Lausanne, July 29, 1828.

You have never asked me how the desire to study natural history, and especially bees, had come to me and taken hold of me so seriously.

A fever which I contracted in 1782 afflicted me sufficiently to make me desire a change of air; your parents, of dear memory, learned of it and desired me to come to their home; I did not hesitate and their proposition was accepted. The cares of tenderest friendship contributed as much as the change of air to the re-establishment of my good health. I found in your parents' library a book whose existence I was not aware of and which gave the first awakening to my curiosity and to my desire to become acquainted with bees.

The memoirs of the Societe Economique of Berne, intended more especially for agriculture, gave account of matters relating to the natural history of bees and of the true or pretended discoveries which interested the savants and the public at that time.

It was in this same work that I read for the first time the strange discovery of Pastor Schirach; although it had made great noise in

Germany, it had not spread into France.

Mr. Charles Bonnet was, I think, the only one who had occupied himself with it, without giving it any credence. The Dutch author asserted that the bees who lose their queen can repair this loss and procure another, provided they find, in the cells used as cradles for the young, eggs or young larvæ from which only worker bees would be reared. To operate this metamorphosis, the only requirement, according to Mr. Schirach, was to give those small beings a larger abode, in which their organs could be better developed, and food better appropriated to their new dignity.

It did not appear to me, any more than it did to Mr. Bonnet, that the change of worker-bees into queens could be operated by causes which, to all appearances, should not have such a result. However, the good-natured style of the Dutch writer, the reliable witnesses who had seen his observations caused me to suspend judgment. I went to Mr. Bonnet, submitted to him my doubts, to which he kindly listened; he even approved of the trials which I might make in contradiction with his expressed opinion and in favor of that of the kind pastor of Lusace. You know that I had the pleasure of succeeding and of convincing Mr. Bonnet that Schirach was not a quack. This first success was that which gave me the desire of better knowing beings that had interested the scientific world ever since its eyes had been opened and had carried to us in their history so much obscurity and error. It is not without reason that I relate to the daughter of my best friends that which I have never yet given to the public; my aim will neither be overlooked by her, nor will it displease her first friends.

Ventilation

June, 1829.

How happy you made me when you saw with your own eyes that which I had entirely failed to mention to you, that ventilation takes place within the hive as well as outside: it is in the center that the air begins to deteriorate, and it is important to quickly stop the progress of its corruption.

The first wing vibrations in the center, therefore, displace around them the air which becomes foul, the resulting void compels exterior air to take its place, it is very soon replaced by other foul air. The continuation of these motions keeps up the salubrity in the entire edifice; it is to my idea, and I trust you will agree with me, one of the finest features in the bees' industry. I was as happy to know that you had witnessed it as when I made the discovery of it myself. This feature is not witnessed anywhere else; its usefulness is equaled by the perfection of the means of action. Of how many centuries are they not ahead of mankind in this respect?

Nothing is more correct than what

you saw and thought concerning honey and the road which it must follow to become wax. With your method of mind, make such conjectures as facts suggest. I congratulate you upon having seen the beginning of the building of a royal cell; you are now at court; you will not suffer any disgrace there. I did not know, for I never tasted it, that royal jelly was salty. If you continue as you have begun, you will teach many things to your teacher.

Ventilation Again

June 29, 1929.

Your letter, which I have just received, relieves my mind, for having received nothing from you for a long time and being ignorant of your sojourn at Lavigny, I was worried by your silence. That which disturbed my restfulness and (pardon me) even my sleep, was that I feared you might be a victim of your curiosity or of some forgotten precaution, and as I might fear that you had been ill treated by your bees, it would be upon myself alone that the blame would fall. The possibility of a letter lost, either on your side or on mine, had come to my mind, but how could I believe in the loss of five letters in succession? It could be explained by your absence, but I did not have the sense to divine it.

My observation of ventilation among bees has also received lately a confirmation which pleased me highly; I am glad I received it through you, whose confidence is as valuable to me as that of our other savants.

My nephew has agreed to send you a copy of a memoir which had been inserted in the "British Library"; it was concerning the entrances which the bees have in their hives and which they know how to change according to circumstances. You will find that they have great perception; you will think even better of it, and your heart, together with your intelligence, will lead you, as will all their history, to place your admiration and your gratefulness.

THE FLIGHT OF BEES

By Peter Petersen.

Early in the past year there appeared an article in the American Bee Journal describing a series of experiments and observations of the flight of bees at Ames, Iowa (Iowa State Experiment Station). It gave the speed of flight with and against the wind and crossing the direction of wind of different velocities. I had expected to see a discussion of the subject follow the article, but since none has appeared and the result of the experiment has a direct and important bearing on the size of our honey crops, I must call attention to it again. When we read we often find the expression "a bee line." It is always used to indicate a straight line between two points. So most people think that the bee always flies straight from the hive to the flowers that it is working on and back again.

But this is true only when the velocity of the wind is below 12 or 15 miles per hour. When it exceeds this the bees will not fly unless they can find a route where they are sheltered from the prevailing wind. Then they will follow such route or routes, and the flight may be far from a straight line. I have known them to fly one-fourth or one-half a mile in one direction, then turn at nearly a right angle and fly as far in some other direction in order to follow a sheltered route to some field that they were working on. It is not difficult to verify this, because on such a day they fly low, two to five feet from the ground. I first noticed this in 1920, the year that I started to keep bees. We had a fairly good flow of nectar from clover, but a number of windy days, when the bees could not fly in the open. Windbreaks, a sunken road and cornfields gave my bees three such sheltered routes leading to a clover pasture, and on windy days they made good use of them.

I got an average of 65 pounds of comb honey from colonies that were rather weak in the spring, besides doubling the number of colonies. I had little or no experience to begin with.

Each year since I have observed the same thing, but not before last summer was I able to make a fairly close estimate of wind velocity or gain in honey per day in the clover honey flow.

The article from our experiment station provided the first. It showed that bees would fly freely when the wind was blowing less than 15 miles per hour, other conditions being favorable. As the wind rose above that they would fly less and probably cease flying when it blew more than 25 miles per hour. Here in western Iowa it does exceed that several days during the clover honey flow, which is our main flow and gives us our best honey.

This summer also gave me a pretty good idea about how much the average colony will gather per day in that time. The season was late and the first half of June was cool and rainy, so there was no perceptible gain before June 20. Then for about four weeks we had warm, sunny days, and a good flow of nectar from white and alsike clover. In that time the bees that I kept for honey gathered a little over 100 pounds per colony, spring count. This would be an average of about 4 pounds of clover honey per colony for each good day's work. My bees are mostly hybrids, wintered in two 8-frame hive bodies. I believe that Italians in large hives would do better than this.

Now, suppose that the bees in an apiary of 100 colonies were placed where there was no windbreak except right around the hives. They would stop working whenever the wind was blowing more than 20 or 25 miles per hour. If placed where they had two or three sheltered lines of flight, they might work right along and gather 3 to 4 pounds more for

each such day, or 300 to 400 for the apiary. Is it worth while to try to find such locations for them? In the woods such sheltered lines of flight may be roads, firebreaks, ravines or natural openings in the timber. In our prairie country windbreaks, hedges, a range of hills or fields of corn, kaffir corn or sunflowers would provide such shelter.

The greatest gain would be where these shelters crossed the direction of the strongest winds.

Iowa.

CONSTRUCTION OF BEEHIVES

By A. V. K.

The article published in the January, 1924, Bee Journal by Mr. C. P. Dadant is very interesting, and in summarizing the contents I came to the conclusion to write this article in regard to construction of hives.

From 1888 to 1900, when my father was living and able to make our hives and frames, we used hives constructed on the idea Mr. Dadant is describing as the most desirable, with some exceptions, which are not brought out, and I will try to describe our hive and its advantages. We produced both extracted and comb honey with the very best results.

The hive was of dimension to hold eleven frames of about the Jumbo size, but long side up, which made a deep brood chamber. The entrance was made at the side facing the side of comb, or what we call the "warm" brood chamber. At the other side we used a division board in which glass was inserted, and the side of the hive had a full opening, except two strips at the top and bottom to hold the sides together. The door had a crosspiece nailed in the center on the outside to prevent it from bending.

1. I found that frames had always the one-third from the top down filled with sealed honey for winter use.

2. The first frame by the entrance was mostly filled with pollen, and in case of excess could be replaced with foundation as empty comb.

3. The combs toward the door were mostly filled after the breeding season with sealed honey, and we have interchanged from one to three between the front combs when the bees were prepared for winter.

4. The brood chamber was contracted, having only as many combs or foundation as seemed necessary, and then the bees started to cover the glass, probably cooling themselves off, owing to the heat in the chamber. The glass was one of the best investments in the hive, many times saving labor and disturbance of the colony, as by simply opening the door we had practically an observatory hive before us.

The extracting supers were made half of the depth of the brood chamber and odd and drone combs cut in half made two pieces to fit the extracting frame. Only when there

was drone combs in the upper story we had to use queen excluders; otherwise very seldom the queen would enter the super.

In 1885 our colony in this hive with three supers on top of the brood chamber carried in the most honey during the ten days at the Lincoln, Nebraska, State Fair, and captured first premium.

But in 1904, in the State of Colorado, American foulbrood got hold of my apiary, causing the loss of the bees and entire equipment of my hives.

Upon my return to Nebraska, I started over with a two-story brood chamber, and in the next issue I shall

try to describe the disadvantages of this system.

When, at the age of 16, while attending the agricultural college in Bohemia, we manipulated bees in the Dzierson hives, and as far as I can remember there was no fun, but plenty of stings in it.

The size of frames used in supers were also used in forming our nuclei to raise queens. The super was made into a nucleus hive by using a division board in the center, and the bottom-board of the brood chamber, the top lath removed at the rear, formed a two-colony nucleus.

Nebraska.

BEES VS. SPRAYING

By Dr. J. H. Merrill, State Apiarist of Kansas.

AN article with this heading, by R. W. Doane, appeared in the December, 1923, issue of the *Journal of Economic Entomology*. The results recorded in this article are so contrary to the ideas generally held by beekeepers that it would be well to read this article carefully before forming an opinion as to the value of its conclusions. The results recorded here state very plainly that there is no danger of poisoning bees by spraying fruit trees when they are in full bloom. This statement will be eagerly seized upon by a great many orchardists as a convincing argument to quiet the complaints of beekeepers who claim that their bees have been poisoned.

In the opening paragraph, the author refers to *Purdue Bulletin No. 247, "Bees and Their Relation to Arsenical Sprays at Blossoming Time,"* by W. A. Price. In this bulletin, as well as in the article, the object is the same; that is, to show whether or not arsenical sprays applied at blossoming time cause the death of large numbers of bees. Since the results in each article differ so widely, it may help us in deciding which to accept, if we study the methods used by each of the investigators and then give credence to the one which we believe to have been the more careful worker.

Mr. Doane says he sprayed trees which required eight gallons of spray, and then covered them with a cage 18x18x16 feet. Something surely must have been wrong with the California climate if an apple tree of that size could have been enclosed in so small a cage. Another effect of this climate was that, after the petals had fallen from the apple trees, the investigator was able to discover pear trees in full bloom. This is the reverse of what is ordinarily taught in horticulture. However, as we have never been in California, we cannot say positively that this might not happen.

Mr. Doane furthermore states he used six pounds of arsenate of lead to fifty gallons of water, at the time of spraying. The amount of poison which he used is so far in excess of

the amount generally used by orchardists that his results **could not**, for this reason if for no other, be considered a fair test as to what might be expected from ordinary orchard spraying. His methods of handling the bees during the experiment were hardly in accord with good beekeeping practices, which might also have affected his results. He sprayed the tree (he did not state whether it was before or after enclosing it in a cage) and later brought in a colony of bees. When those bees emerged from the hive they had no reason for returning to it as their home. Their natural inclination would be to return to the place from whence their hive came. If they were prevented by a cage from doing this, then a large number would wear themselves out by beating against the screen and drop to the ground. Mr. Doane states that he collected 190 bees, which were later examined for arsenic. He does not state whether the bees were tested individually or in a mass in order to determine the amount of arsenic which each had consumed. It is interesting here to compare Mr. Doane's method with that used by Price. Mr. Price sprayed his trees with the amount of arsenic ordinarily recommended for orchard spraying, instead of picking up a number of bees indiscriminately from the ground, he selected, for examination purposes, bees which he found actually at work in poisoned blossoms, and these were each tested individually for traces of arsenic, which certainly seems to be a more careful method than that used by Mr. Doane.

During the following year Mr. Doane repeated his experiment, but this time he varied his bee manipulations somewhat. That is, he kept the colony closed up over night, presumably that the bees might become acquainted with their new surroundings, which was certainly commendable. However, when he saw a large number of dead bees in front of the hive, he did not examine them to see if they were killed by arsenic, but surmised that their death was due to

smothering. Surmising has no place in scientific investigations.

Mr. Doane states that bees which, to his knowledge, never had been in contact with the sprayed trees, were found upon chemical examination to each contain .000002 grams of arsenic, and that this amount caused them no harm. On the other hand, Mr. Price found that a very much smaller dose of arsenic was fatal to the bee. In fact, he believed that an amount of arsenic too small to be determined by the Gutzzeit method would cause the death of the bee.

During the second year of Mr. Doane's experiment, he examined from time to time, colonies which had access to sprayed trees and came to the conclusion that the spray had not injured them. These investigational methods are by no means as careful and thorough as those employed by Mr. Price. The latter placed every bee which had been taken from the poisoned flower under an inverted glass funnel, where he recorded the length of time required for the poison to kill the bee. While he was carrying on these investigations, he also kept under observation bees that had not had access to the sprayed blossoms. It is worth while to notice that all bees from sprayed blossoms died in from one and a half to six hours, but most of them died within three hours, while the bees which had not had access to poison were alive at the end of the experiment and flew away when released.

There are other points which might be mentioned, but the general trend would be similar to those already dealt with. To sum up the whole situation, both investigators had for their primary object the determining of the relation of arsenical spraying to the poisoning of bees. Their published results differ widely—Mr. Doane claiming his investigations indicate that bees are not killed by spraying fruit trees when in full bloom. He also states that arsenic may be found in small quantities in bees and not be injurious. On the other hand, Mr. Price shows by his experiments that it is sure death for a bee to work on a blossom which has been sprayed by an arsenical poison. He also says that the smallest amount of arsenic which is possible to detect in a bee will cause its death. Since these reported results differ so materially, there must be some explanation for this discrepancy. After careful re-reading of both papers and the studying of the methods used in these investigations, it seems that a fair minded jury would find that Mr. Price's methods were more scientific, and that his results were accordingly more apt to be correct.

BLACK VS. YELLOW

By C. C. Stone.

On page 225, *American Bee Journal*, 1921, and pages 459 and 629, 1923, are special articles to which I would refer the reader. My pur-

pose is to call attention to one more apparent cause for the appearance of the black color where it is not wanted. Experimental breeding has shown that in the cross Italians and Carniolans the yellow color is dominant over black—completely so in the primary cross. So far as I know, the behavior of color in the Italian-German cross has not been clearly demonstrated. I am preparing some breeding tests, but hope to hear that such work has been done with better equipment. Scientists will have a nice problem in color genes if black proves dominant in this cross, and breeders will have to deal with a color that is sometimes dominant and sometimes recessive. For the purpose of the present discussion, I shall assume that black is recessive in either cross and consider that color without regard to the race it comes from.

If a pure yellow queen mates with a black drone her bees will be yellow; but, even now, many a breeder will have it that she is purely mated and will ship her for a "tested" queen. He is perfectly honest. He has always supposed that the slightest taint of black blood would show in the first cross. The purchaser, seeing only yellow bees and having his stock from a reliable breeder, is sure his bees are pure. When such a queen is superseded and her daughter mates with a black drone about half of her bees will be black and the owner will rightly pronounce her mated. What he does not even suspect is that he has mated a mixed dominant to a recessive.

But if this young queen meets a yellow drone the black that lies recessive in half her bees will not show and the apiarist will be pleased, for he must think his stock is "breeding true." He will be sadly disappointed later. There may be no wild bees within miles, but this queen will certainly produce drones of "black blood." All unknown to the owner there is, at such a stage, in his own hives, the material for a general "mix-up" when more queens are reared.

It is clear that we need not always look outside our own supposedly pure-bred stock to find the source of our trouble. More of it comes about in this way than at first thought might seem possible. Down to a very few years ago almost any breeder might have sold just such a "tested queen" as I have described. I now know that I did. Furthermore, it is quite probable that we have innocently sold many pure-mated hybrids, thus giving the purchaser at once black drones, yellow drones and mixed workers.

The conclusion is correct only upon the assumption of the dominant character of yellow. If there has been found any conclusive evidence concerning this point in the Italian-German cross it has not yet become common knowledge, and a notice of it in some of our bee journals would be gratefully received. Such evidence would settle many questions.

We are learning more about how to watch the drones and how to manage them. True, we do not know much, but we are learning. An interesting article dealing with drone selection appeared in this journal in 1921 (April number, page 134). After noting the idea of prepotency in the male, the author reminds us that the drone offspring of a queen is not related, by blood, to the drone with which the queen has mated and gives the advice often given by American breeders, to rear drones from the queens at the head of the best producing colonies. This is good advice. It has given good results. But while we are rearing such drones for immediate use, why not go further? These colonies are heavy producers by virtue of exceptional qualities in the workers. Now, the workers are related to the queen's mate. We must credit him with half the good in the workers. Why should we continue to breed from drones not related to him? We insist on queens from mothers of the best colonies, why not drones from the fathers of such colonies. If we will rear queens from such colonies and, with them, supersede all inferior queens we will have selected our drones.

Let these queens rear all the drones. With this device, I have found it possible to take a single queen into a mixed yard and, with no other of her strain, establish the pure strain in all the yard. We have only to wait until the drones from the old queens are dead to rear queens from our one pure queen to mate with drones from her daughters. These last queens, in turn, supersede all the others.

The inbreeding may be objectionable, but the possibility is valuable in spite of that, and the faults of inbreeding can be avoided or corrected. Texas.

HONEY AT THE STORES

By A. F. Mead.

Any person who will take the trouble to make a little investigation of retail groceries and note the large proportion who keep no honey at all in stock will surely be convinced of the necessity of developing some system of marketing that will distribute honey more generally over the whole country. It may be hard to guess or work out that system, but I am satisfied that it will be done and improvement made, although it will take time and much planning and experiment. I believe one most important factor will be in getting producer and consumer nearer together. The producer should be able to receive more than half of the amount the consumer pays. Our containers cost too much. We should not be obliged to pay 7 cents for a glass to hold 10 cents' worth of honey. At the same time, a lot more honey would be used and sold if it could be sold from groceries in small glasses or containers more cheaply. We find on many grocery shelves eight-ounce

glasses for 25 cents, but a dozen glasses last the grocer a long time. If the same eight-ounce glass could be sold for 12 or 15 cents, it would result in moving a large quantity and advertising and making sale for a lot of five and ten-pound pails.

In making the trip by auto from Battle Creek, Mich., to St. Petersburg, Fla., I inquired at nearly all our stops as to honey markets, and was much surprised at the large number of groceries, and in some cases apparently whole cities and villages, where there was no honey on sale. Through Michigan, Ohio and Pennsylvania, they seemed to be very well supplied from local producers, but as soon as we entered Maryland I found it getting scarce. In Virginia and North Carolina I found some groceries that carried honey shipped in by bottles a long distance away and at a high price, but very little local honey. In South Carolina and Georgia a few groceries have 24-ounce jugs put up by a New Orleans firm and retailing at 40 cents each. I was told at one place that this was California honey, but there was nothing on the label to indicate its source. At one grocery in Georgia, in answer to my inquiry for honey, the clerk told me they had pure honey in one-half-gallon cans for 60 cents a can. Upon examination I found the label to be in small, plain letters, "Corn Syrup and" immediately below, in large, colored print, "Pure Honey, 4½ Pounds." I called the attention of the clerk to the label and he told me he never noticed the corn syrup part of the label, but supposed it was all pure honey. I presume he told the next customer the same story.

At Perry, Ga., I made the rounds of the stores and found none on sale, but all directed me to the grocery of Thomas D. Mason, who, they said, produced and sold his own honey. I went with him to visit his apiary, and he had the most up-to-date system I found in that vicinity. He has sixty colonies in movable frame hives of his own construction. He uses only starters of foundation for either brood or surplus frames, produces no comb honey in sections and does not extract, but cuts the honey from the frames and sells it as chunk honey. He has had no honey on sale for some time, because he has had no time to take it off the hives. Nearly his whole crop is still on the hives and he could give me but very little idea of the amount of his crop, but I think it would not be heavy, and perhaps not very choice in quality. He did not have more than one super on any hive. While his system of management and his product are not much like ours, in the North, I am satisfied it is much in advance of the usual way of handling bees and honey in that part of the South through which we passed, as most of the hives we saw were rough boxes, a few in a place, and showing all degrees of neglect.

Michigan.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

MOVING BEES IN WINTER

I bought ninety colonies of bees and I am wondering if it would be dangerous to the bees if I should move them this winter. I have seven miles to move them.
The place is sold where my bees stand and they may want them moved.

OHIO.

Answer.—Bees may be moved at any time when the weather is not cold enough to chill those that stray from the cluster. During the moving, the excitement causes them to produce an abnormal amount of heat, and they would suffer only when, after arrival, they would again become quiet and some of the bees remained away from the main cluster. It is therefore better to move them when the weather is not much below freezing point.

The ideal time to move them is when there is a good, warm day in early spring, and they may be released at once upon arrival, so that they may get acquainted with the new location. Put a slanting board in front of each hive; to call their attention to the fact that they are in a different location. Usually, however, after a long ride, they feel very much as does a swarm that has just been hived. We have never lost many bees in moving them at the end of winter.

HUBAM CLOVER

Does Hubam clover live through the winter, or does it have to be sown every spring, like oats and other small grain?

ILLINOIS.

Answer.—Hubam sweet clover is an annual plant, just like oats. The regular white sweet clover (*Melilotus alba*) is a biennial; that is to say, it grows about a foot or two the first year, blooms the second year, then dies. Hubam is just a variety of it. It may live over winter if sowed late, but it is not desirable in that form. If sowed in spring, it blooms and dies the same year.

KEEPING HONEY

1. I have read in A. B. J. that granulated honey could be kept for a number of years. I don't seem to have had any success in trying this. I have several hundred pounds of clover honey, 1922 crop, in tin pails, extracted when perfectly ripe, and over three-fourths capped. A thin layer at top is dried up; the rest of can has not the good taste and flavor of new honey. Other pails have a layer smelling slightly sour. It has been kept in unheated storage. Do you think the changes of temperature have affected it—below zero in winter, warm days and cold nights in spring, and then warm summer weather?

2. Could this honey be made fit for sale by heating it "au bain-marie"? If so, how long and at what temperature should it be heated?

MONTREAL, CANADA.

Answers.—1. As your question is the second one coming to us this season from Canada in regard to the preserving of granulated honey, it may be that the climate of your northern country has an influence upon the keeping of honey. However, I am under the impression that the

honey in question was not so ripe as you think it was and that this is the reason of its loss of quality. You do not say in what kind of receptacle it was kept. If in small pails, it is possible that it gathered more or less moisture. However, there would be but little danger of that in a well closed pail. We have always kept honey over in large barrels, and I remember when we kept some seven or eight barrels for six or seven years, and it was in good shape. It was kept in a very dry cellar, where it did not get cold or hot. This may have had some effect upon its condition and may have enabled it to keep its quality. But I am strongly of the opinion that it kept well because it was very ripe and had the soft granulation of butter.

2. I believe you can improve your honey by heating it, as it will evaporate the excess moisture and possible ferment. But it must be heated very slowly, at not to exceed 165 degrees.

BOTTLING

1. How hot would you have the honey when bottling it?

2. Is honey still "pure honey" if strained through a cheese cloth?

3. If wax is found mixed in the honey, will it be considered adulterated?

Answers.—1. We never want to heat honey much above 160 degrees, as it spoils its flavor by evaporating some of the essential oils that come from the perfume of the blossoms. Honey at 90 degrees to 100 degrees runs very freely and I would not care to have it much hotter, to bottle it.

2. Yes, certainly, if you did not add anything to it.

3. Wax will not mix with honey, but rise to the top, if you just give it a little time. Wax on the surface of the honey is not acceptable to the consumer, because usually he does not know what it is. So it should be skimmed off before bottling.

WAX IN HONEY

I took some honey off in frames and cut the top off the cells, put it in my extractor; after extracting it, I find lots of wax in the honey. I heated the honey; thought the wax would come to the top, but it did not. Will you tell me what to do to get this wax out of this honey?

I send you a sample of this honey under separate cover.

MISSOURI.

Answer.—The sample of honey was almost a week in reaching us. I have examined it and tasted it and do not find anything in it but air bubbles. However, in any case, it is not necessary to melt or heat honey in order to remove the wax particles that may have fallen in it. Wax is much lighter than honey, and if you leave your honey to stand in a vessel for a day or two, all the particles of wax will rise to the top and you may then skim them and any impurities off the honey. Wax is even lighter than water and will rise on the top of water, while honey is much

heavier than water, nearly four pounds to the gallon.

Leave your honey to stand in a warm room, then see whether there is any skum on top of it.

SWARMING

If lack of room is the cause of swarming, why do bees swarm repeatedly when located in an attic and occupying only a corner of that attic?

ILLINOIS.

Answer.—Did you ever go into an attic in the warm days of summer, when the sun shines for fourteen hours or more upon the roof? When bees are in a hive, they are able to change the air and lower the temperature by fanning; but when they are in the corner of an attic, it is out of the question for them to change the temperature by fanning, as the air which they force in among the combs is the heated air of the attic. That is why they swarm. We would probably do the same.

In addition, allow me to say that I have given six or seven causes as inducing the bees to swarm. But many beekeepers seem to think that they need remedy only one of those causes in order to stop the desire of swarming. Let me recapitulate those causes: Lack of room, lack of ventilation, too high a temperature, old queens, too many drones, sudden crop, when there are no combs built to store the honey. In addition to these, there is also a tendency to swarm caused by inheritance, as in Carniolan bees, from having been for centuries hived in hives that are too small.

RESTLESS BEES

1. I have 80 colonies that went into winter quarters November 19 in good condition with lots of young bees and good honey for stores; they are now getting uneasy, and in inspecting seven I find that they all have sealed brood and some of it hatching. I had the cellar temperature 42 degrees. When I raised it to 45 degrees they would get to roaring; they seemed to be quietest at 42, so I kept it there as much as possible. I have the seven outside and made telescopes to slide down over the hives, as I have no packing cases and cannot very well afford to get or build them.

2. Do you think the tar paper wrappings will give any protection? The weather is, of course, not settled at this time of year in this locality. It is generally customary to set them out about April 1.

3. These colonies are all headed with young queens. Do you think this may account for the premature brood rearing?

4. Do you think it would be any better for me to set them all out and wrap them in paper, or leave them in the cellar until warmer weather comes?

WISCONSIN.

Answers.—1. I believe it was a mistake to take those colonies out so early, although they may do well if they can get an occasional flight. It is quite probable that your cellar was, at one time, too cold or too warm, as either condition will compel the bees to produce heat and breed. A very regular temperature is best; 42 to 45 is good.

2. The paper wrapping is very good for the bees that are outside. If they have good honey, they may be able to get along till a warm day comes.

3. I do not believe the age of the queen has much to do with the breeding in the cellar. It is the temperature of the hive which regulates the brood-rearing, as the bees feed the queen more or less.

4. If the bees cannot have a flight, they will be much worse off out-of-doors than in the cellar. Keep them as quiet and as much in the dark as you can. If they do not lose too many bees, the early breeding will make them strong.

CANDY FOR QUEEN CAGES

I am writing you through the courtesy of Countess Valentina Visconti, who has been kind enough to give me a few words of introduction, which you will find enclosed.

I have been keeping bees for a number of years and have now about 350 colonies in Modified Dadant hives, in six apiaries, in the irrigated prairies of Lombardy, where white clover is plentiful. I began shipping bees to England last year, with good satisfaction, having received some fine compliments.

Here is my reason for asking you to write me: Can you give me a method for making candy for shipping queens, or send me a publication in which such method is given? I have so far made it by mixing sugar with honey, but I fear it is not the best method. I wrote to English clients, but they do not send me any satisfactory information. I thank you in advance.

CARLO, ASTORI, ITALY.

Answer.—I am certainly glad to respond to the recommendation of Countess Visconti, at whose home we were so kindly welcomed in 1913, by herself and her father. I see that she reports her father as compelled to remain in bed, owing to his great age. I am truly sorry of it.

Pellett's "Practical Queen-Rearing" contains a good method for making candy without honey, as follows:

12 pounds of sugar, fine granulated.

1½ pounds candymaker's glucose.

1¼ quarts of water.

1-3 teaspoonful cream of tartar.

Mix cream of tartar and glucose and heat in a kettle with the water. Add the sugar after the mixture comes to a boil, stirring constantly. After the sugar is dissolved, stop stirring and heat to 238 degrees F. Then remove from fire and let cool to 120 degrees, then stir until it looks like a paste, when it is ready for use.

In the March, 1923, number of the American Bee Journal you will find an article, by Allen Latham, page 123, on queen-cage candy. In addition to all this, if you will send 20 francs to Mr. Perret-Maisonnette, at 43 Avenue du Marechal Foch, St. Cloud, France, he will send you his book on queen-rearing, which contains four or five pages on candy making. It is in French, but you will have no trouble in understanding it, since you Italians always speak French.

(Several of our readers have asked for the Perret-Maisonnette book, and we sent to France for ten copies, but for some reason they have not yet reached us).

SPRAYING

I lost fifty colonies of bees last spring, 1923, in spraying peach trees in bloom. My apiary is within one-half mile of a large peach and apple orchard, and the owner of the orchard said that in the spray with dust powder the dust must have had poison in it. Can I screen the bees in the hive so they cannot go out for ten days and not injure the bees and brood? DELAWARE.

Answer.—It would be a mistake to try and confine the bees to the hive at the time of spraying. It would injure them and would probably cause a great number of them to die. The brood would also suffer, as they could not go after water and pollen for it. It is much better to get your neighbor to spray at other times than the time of bloom. The horticultural magazines and all the teachers of horticulture agree with the beekeepers in saying that the presence of bees upon the flowers helps fertilization of the fruit and that spraying during bloom is very injurious, as it destroys some of the pollen.

A number of repellents are used to keep the bees away from sprays that contain

poisons. Tobacco extracts, fish oil, oil of tar, a small quantity of carbolic acid and other preparations will keep the bees away. But the best thing to do is for the horticulturist to abstain entirely from spraying during fruit bloom, using the spray both before and after bloom.

The Departments of Agriculture of the U. S. and of the different states issue bulletins on this subject. Better write to the Department of Agriculture and get bulletins and educate your friends and neighbors on the correct way of spraying. They should be as much interested as you are in keeping the bees safe.

PAINTING HIVES

My hives need paint, and I never saw anything in print as to whether the odor of the oil or paint will have a bad effect on the bees.

I intend to paint when the weather is cold and the bees inactive.

PENNSYLVANIA.

Answer.—The odor of paint is not usually objectionable to bees, for we often see them hovering about fresh paint at the end of winter, when there is nothing for them in the fields. The odor of paint has some resemblance to that of propolis and they may mistake the one for the other.

However, the painting of hives inhabited by bees is not very desirable. In the first place, the spots most in need of paint are not available when the hive is occupied. If you ever had to repair old hives, as I have done hundreds of times, you would ascertain that the first parts to rot are the bottom-board and the edge of the hive that rests upon the bottom-board. So, when I was a boy and my father set me at the job of hive painting, he always recommended that I paint most especially the under edge of the hive body and the top edge of the bottom-board, where the two join, for there the moisture rests for weeks and months in damp weather. So we always transferred our colonies into new hives when we wanted to paint the old ones. One should always have some spare hives for swarms, and it is easy to do such transferring if your hives are all alike, as they should be.

However, if you insist on painting your hives with the bees inside, the only precaution to take is to avoid painting them near the entrance in mild weather, as some bees would get coated with paint and in such cases would die.

DISEASE—INCREASE

1. A southern nuclei man sent me some American foulbrood, and through my inexperience I made a sorry mess of it; however, I have now gone over all my equipment and am positive it is clean.

I had a man here from Ames, Iowa, last fall, and of my sixteen stands he pronounced seven as having A. F. B. and nine O. K.

Of course, I have no pest yard, but in fruit bloom in the spring—if those colonies are alive—I intend, the day before shaking them, to put a wire bee escape board, with the escape closed, over each of the healthy colonies, and put inch blocks between the escape board and the cover, so they can get air, and then late in the evening block the entrances bee tight; then in the morning wheel them all around to the front yard, about six or eight rods from where they now are in the back yard. Then there will be none but the seven foulbrood colonies left in the back yard. Then I will shake them and not bring the clean colonies back until the next day.

Do you think this will work all right?

2. I want to make increase of five or six in the spring by the method outlined by Mr. Pellett, on page 85 of "Practical Queen-Rearing," and would like to know whether I can get queens from the south and intro-

duce them to the upper stories when I move them up instead of giving them queen cells.

IOWA.

Answers.—You should give us the name of that man, if you are sure you got the disease from his bees, because we don't want to allow anyone to advertise in A. B. J. who sells any bees from a yard in which foulbrood exists. It is not sufficient to try to ship from hives that are exempt. If there is any disease in the yard, there should not be any shipments made from it.

As to your plan, I believe it will work; but I would not move the colonies to any part of the yard. I would place them where they would not get any sunshine while they are shut up, so they would not worry. But the idea of keeping them closed up while you treat the others is good, for it only takes a bee or two with a little honey to transmit the disease.

2. If you buy any queens for your swarms, it will not be necessary to put the upper story on the old colony, after the queen is introduced, because the bees will naturally remain in such a queenright colony.

The purpose of the method given in the "Queen-Rearing" book was to keep the entire force together until they had an extra queen. A method which I like still better is to put that swarm on the stand of another colony, moving the latter to a new spot. In this way you make one division from two hives, taking the brood from the first and the field bees from the second, and your swarm is as strong as either of them, at once.

HONEY VINEGAR

Have read your article on "Honey Vinegar" (November issue, page 545) and decided to make some. Have been unable to obtain the tarragon leaves, and would ask you to send me some C. O. D.; also inform me as to when they are put in.

NEW JERSEY.

Answer.—We have no tarragon leaves in winter, because the plant loses its leaves as do all other garden plants. But we can send you some next summer; or, better yet, we could send you a plant, if you will just remit enough to pay the trouble and postage, say 50 cents. We have a half a dozen or so to spare, and have sent some to different persons at different times. We do not find tarragon in the seed or plant catalogs.

As to the time to put it in vinegar, we usually do it when we prepare pickles, letting a small bunch of the leaves and stems soak in a gallon of vinegar.

RENDERING BEESWAX

Under separate cover I am sending samples of propolis or settlings from wax. Nos. 1 and 2 probably contain some pollen and dirt, and No. 2 may contain some wax. Nos. 3, 4 and 5 are from repeated meltings and keeping in liquid state from twelve to twenty-four hours. About one-fifth settled out. All I wish to know is, do we seem to have something unusual?

NEBRASKA.

Answer.—The samples of so-called propolis or pollen are pure wax which has been spoiled by overheating with water. When you boil beeswax for a long time over water, particles of steam get mixed in with small particles of wax. This wax cannot get together again except by dry heat, which will evaporate the moisture and melt it together. We have known of beekeepers spoiling all their wax by overboiling again and again, until they began to believe there was no wax in it at all. When you melt beeswax you should boil the water, but

only very slowly so as not to beat up the liquid. When you have residues of this kind you should either render them carefully with dry heat or with a sun extractor or send them to a wax establishment to be brought back to proper condition. Wax which is thus beaten usually loses half of its weight in returning it, because it contains imperceptible parcels of moisture which increase its weight temporarily.

HEATING HONEY

To what temperature should honey be heated to keep it from granulating?

ILLINOIS.

Answer.—I do not know that anyone can give a temperature to which honey may be raised that will entirely and forever prevent granulation. I have seen honey that had been spoiled by overheating and that granulated after long standing when the temperature was low enough. Well-ripened honey is very slow to granulate, but when it does granulate, it is usually with a very soft grain. Honey which has been heated also granulates with a soft grain. Honey which is stirred while granulating also shows softer granulation than honey that has remained quiet.

The temperature of 160 degrees is usually considered the proper one to heat honey if we do not wish to evaporate its essential oils, the flavoring and odoriferous oils of the blossoms. Keeping it at that point for a few hours will make it a little darker, but will also insure its remaining in the liquid form, fairly, for a season, at least.

Bear in mind that, unless great precautions are used, and sometimes in spite of precautions, honey which is heated loses some of its qualities. It is less palatable, and darker. Try and get your customers to use it in the granulated shape. After they have tried it, unless they mistrust you, they will like it fully as well in that shape.

GRANULATED HONEY IN COMBS

I am terribly bothered with granulated honey in extracting supers. I believe that I have a ton of it, and cannot now throw it out with the extractor. I expect you will tell me to put these supers on the hives in early spring; but that will not work, for I have tried it. There is too much for the bees to get in the spring; they will not take it down. I have been thinking of putting the combs in hot water, standing, then raise the hive and put the super underneath, as they need lots of water in the spring anyway. What do you think of it?

COLORADO.

Answer.—If I had that honey and could not extract it, and was sure that the bees would not take it out if I placed it on the hives, I would cut it out and melt it, just warm enough to render the wax out. But it is possible that you might feed a lot of it by dipping the combs in hot water for a minute or so and giving it to the bees. If you put these combs in supers under the brood chamber, look out for robbers, because they will be sure to have a strong smell and perhaps to drip. Of course, water is needed in spring. But it is also needed to liquefy granulated honey, so you cannot give them too much of it.

Perhaps you could get some of that honey to melt and drip out of the combs by placing them, flat, on a screen over a pan in a hot place, where the thermometer stood at about 110 degrees. Not having had such an experience, I cannot say. Whatever you do, if you succeed, let us hear from you.

NEW ZEALAND HONEY

The November issue of the New Zealand Fruit Grower and Apiarist has an interesting report concerning the affairs of the New Zealand Honey Producers' Association. It is stated that a representative has recently toured the far east in an effort to find a market for the surplus in China, Japan and the Philippines. The Philippine trade is said to be small and to be supplied from California at badly cut prices. It Japan it was found that honey was sold 75 per cent cheaper than the New Zealand product could be offered. Another representative who visited South America found that high tariffs made it impossible to sell in these countries successfully, as the duty added to the price of the honey made the price prohibitive. He also reported that everybody handling the product there required an enormous profit.

In South Africa it was found that the Government prohibited the importation of honey from Australia, hence that market was closed to them. Canada is reported as already producing enough for her own requirements.

The report indicates that Great Britain offered the only export market open to New Zealand honey producers and to begin with they found but little demand. In 1921 they found but little honey consumed in Great Britain, but through the forty traveling salesmen of their London agents and other propaganda they have established a demand which will consume their product at a profit. Shareholders in the Association are advised to increase their number of colonies in the belief that a market will be provided.

It certainly shows a great deal of enterprise on the part of the New Zealand beekeepers when they are able to create a market for their product half way around the world

and to sell at a price which promises a satisfactory profit.

If it is possible to carry honey half way around the world and create a demand for it by advertising in a country like England, then certainly American beekeepers would be able to create a similar demand in the big cities at our door.

New Zealand honey is sold in London under the Association's own label as "N. Z. Imperial Bee Honey." It is a little surprising that an attempt is being made to sell American honey in London in competition with the Dominion product and thus get the benefit of their advertising rather than to create a demand by advertising American honey in American cities, where the same kind of effort would create a similar, or better, demand.

THE LONG IDEA—MARKETING—STANDARDIZATION

By George Weaver.

The editor's article on the best size of hives contains some remarks concerning the "long idea" variety which I would like to comment upon. Before doing so, however, I wish to say that I entirely agree with him in his conclusion that the Dadant deep-frame hive is best suited to most locations for the production of extracted honey, and were I beginning to install an equipment today I would unhesitatingly adopt that pattern. The two-story Långstroth, advocated by the British Columbia Department of Agriculture, and largely used in this province, seems to me objectionable on the dual grounds of excessive space and its annoying tendency to lead to an upper brood chamber and an empty hive below. It also entails unnecessary lifting for examination, a feature which is eliminated by the Dadant system, and also by the long hive.



A large shipment of honey from Wellington, New Zealand, preparing for shipment abroad. New Zealand beekeepers depend upon English markets for their surplus.

Concerning the latter, Mr. Dadant says he found that, in a 20-frame, one-story hive the surplus honey got badly mixed in with brood, so much so that in some cases every frame had both brood and honey. My own experience is that the amount of trouble I get in this respect is so trifling as to be almost negligible. I find that, as a general rule, the queen keeps to one center and uses from twelve to fourteen frames, which give her no more room than she actually needs. I should explain that the hives I use provide for nineteen frames, and I do not depend on them to provide most of my surplus. I super up as required, and sometimes have the main story filled and three or four standard size supers above. But I always get plenty of full combs of honey from the bottom story also. I find, further, that the old notion of bees' objection to working sideways instead of upwards is quite unwarranted. As we all know, it is generally advisable to bait a fresh upper story with some combs already worked on, but I have never found any such expedient needed to draw workers to the ends of the long hive.

I note that M. G. Dadant, in Crop and Market report, emphasizes the point that to produce a large and steady market for honey it will be necessary to secure some stability of prices. This matter seems to be about the weakest feature in the industry. We do not find that the man who keeps a cow or two, sells milk or butter at less than local market values, nor do we find any great uncertainty as to the current price of eggs at any time, but the price of honey in many districts seems to be just whatever can be gotten for it. Moreover, too many beekeepers ignore the legitimate functions of wholesalers and retailers and devote all their energies to selling direct to the consumer. This is not good business; it is the middleman who is, and always must be, the biggest buyer, and we should not be everlastingly railing at him and seeking to usurp his functions.

In certain localities it may be necessary to sell direct, but, when that is so, care should at least be taken not to undersell the retailer, who is really the beekeeper's best friend. Personally, I have so far been able to sell my crops through local retailers in my own and nearby towns, charging them what they would have to pay their wholesaler, and having a gentleman's agreement with them that they will not undersell each other, and also that I will not undersell them. I do not offer honey to the public, and if any of my neighbors come to me, I charge them exactly what they would have to pay the storekeeper. I gather from Mr. Pellett's notes in "Burr Combs" that marketing problems are to receive special attention, and I hope we shall see the subject thoroughly discussed.

Wrens Valuable to Beekeepers

The little wren is among the most valuable birds and one of the enemies of the moth miller. The wax worm hatches from the eggs laid by the moth miller and feeds on and finally destroys the wax combs within the hive. The wren catches the moth millers in large numbers to feed her young.

A few wren houses put up around the apiary are a good investment for the beekeeper. In making the houses, make the opening just the size of a silver 25-cent piece, to prevent the English sparrow from taking possession and disturbing the wrens.

E. N. Rentz, Iowa.

Stingless Bees From Canal Zone

The following news item from a recent newspaper sent to us by J. R. Kitterman, of Shirley, Indiana, describes the stingless bees from tropical America. The reference to storing honey in cells resembling bunches of grapes identifies it with the various accounts of ancient writers, nearly all of whom mentioned this pe-

culiarity. One of these accounts was quoted on page 42 of our January number:

Biting Bee Minus Sting Found in Canal Zone

New York—Specimens of "social" bees which bite but do not sting have been acquired for the American museum of natural history from the Canal Zone, by Dr. Frank E. Lutz, curator of the department of entomology.

These bees produce varying grades of honey from that with a fine flavor to some that is acid and actually poisonous, which they store in cells resembling ordinary grapes in shape and size. Some of them neither bite nor sting, but eject a fluid which burns the human skin.

Nests containing as many as 75,000 of these bees, which are smaller than the common house fly and have prominent gauzy wings, were found in Panama by Dr. Lutz. He found another species of bee, miserly and so distrustful of its brethren that it refuses to colonize, hoarding its honey in secret places.

HONEY GIRL ITALIANS BRED IN LOUISIANA

"Lead the World in Honey Production"

Best Record Season 1922, 541 lbs. PRODUCED BY ONE HONEY GIRL COLONY

Best Record Season 1923, 650 lbs. PRODUCED BY ONE HONEY GIRL COLONY

Authentic Records Prove PROLIFICNESS a Characteristic

Their bees are extremely gentle, beautifully marked with bright colored bands; very resistant to European foulbrood. Booking orders for Queens and Combless Package Bees.

FREE: 100 Honey Girl breeding queens free this season.

A card will bring the story of the Honey Girl strain and our complete price list, also full particulars regarding free queens.

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BEES BRED FOR HONEY GATHERING QUEENS

Moore-Howe strain from select mothers chosen from 1,000 colonies for honey-gathering, white capping, uniformity of color and gentleness.

First premiums for five years in my section on queens and nuclei.

Prices for April and May

3-frame nucleus with untested Italian queen	\$5.00
1 untested queen	\$1.00; 25 or more 90c each
1 tested queen	\$1.50; 25 or more, \$1.40 each

Best Service. Satisfaction Guaranteed.

JOHN W. CASH, Bogart, Ga.

QUEENS AND BEES—Prices 1924

	To March 15		Mar. 15 to Apr. 30		May 1 or later	
	1	10 or more	1	10 or more	1	10 or more
Unt. Queen	\$1.75	\$1.50	\$1.50	\$1.25	\$1.25	\$1.00
Test. Queen	2.50	2.00	2.00	1.75	1.75	1.50
Sel. Test. Q'n	3.00	2.50	2.50	2.25	2.25	2.00

Breeding Queens in one-frame nucleus, \$10.00 to \$25.00.

NUCLEI—NO QUEEN

	To March 15		Mar. 15 to Apr. 30		May 1 or later	
	1	10 or more	1	10 or more	1	10 or more
1 frame, each	-----	\$2.00	-----	\$1.75	-----	\$1.50
2 frames, each	-----	3.00	-----	2.75	-----	2.25
3 frames, each	-----	4.50	-----	3.75	-----	3.00
4 frames, each	-----	5.50	-----	4.75	-----	3.75

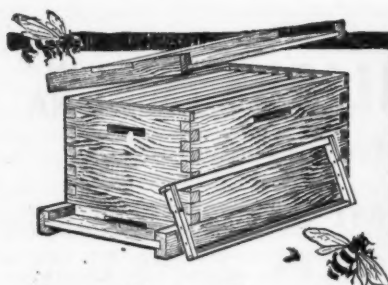
BEES—NO QUEEN

	To March 15		Mar. 15 to Apr. 30		May 1 or later	
	1	10 or more	1	10 or more	1	10 or more
1 pound	-----	2.00	-----	2.00	-----	1.75
2 pounds	-----	3.50	-----	3.50	-----	3.25
3 pounds	-----	5.00	-----	5.00	-----	4.00

Add price of Queens you order to above prices on Nuclei and Package Bees.

Write for prices on large quantities of Bees, Queens and Nuclei. It is well to book your orders in advance so as to insure delivery when wanted. Send 10 per cent with order and the balance before shipment goes forward.

ROY C. PATTEN, Kings Lane, Whittier, Calif.
Phone 4343.



Save 1/3 on Standard Hives

Ward's are standard hives, made of clear western pine, thoroughly kiln-dried, no knots. Made especially for us by one of the largest and best known manufacturers in the country. All parts accurately machined and close-fitting. Why pay more? Order your new hives direct from this advertisement. Catalogue number 187M5681—eight frame hives—price five for \$10.95. Shipping weight 130 pounds.

We can start you in Bee-keeping

These hives are typical of Ward's Bee-Keepers' Supplies—low-priced but standard, serviceable supplies of every kind. We sell pure bred Italian Bees and Queens. Send for our General Catalogue No. 100 which shows our complete line of hives, sections, foundation, smokers, honey extractors, feeders—in fact, everything for amateur or professional bee keepers. Write to Dept. B2

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HIVES

5 for \$10.95

one story eight frame



FREE

Write for General Catalogue showing all standard Supplies for Bee Keepers at lowest prices.

BEEKEEPERS WE MANUFACTURE DOVETAILED HIVES, HOFFMAN FRAMES, SECTIONS AND SHIPPING CASES

Our hives are made of best grade White Pine, cut accurate and smooth to standard measure. Sections are made of Basswood, polished on both sides. There are no better made.

We carry a complete line of everything in the apiary. Our shipping facilities are as good as can be found anywhere. We want your business. We guarantee prompt and satisfactory service. Price list free.

MARSHFIELD MANUFACTURING COMPANY, Marshfield, Wis.

BEE BREEDING ARTICLES REVIEWED

By Jes Dalton.

Over a year has elapsed since the lamented Dr. Bonney wrote his brief article that at once caused editorial comment, and discussion in most of the bee publications of the United States. While many of us disagree with the article, we are all agreed on lamenting that the good doctor could not have lived to see the interest he aroused in his little write-up.

This article has an amusing phase to it; after conceding that nearly all the bees that have ever been imported are Italians, he in effect shows that they at first are no good, but after they "run away to the woods" as it were, their offsprings greatly improve. I do not know whether the Doctor would have conceded that there was a honeybee in these American woods before the advent of the Italian bee, and its admirers. For my part I cannot agree with his conclusion of the "Italian being a yellow fraud."

I have also tried that Caucasian, and while all he says is correct, he did not say the one thing—**swarming**. I have cut out 50 cells from a Caucasian colony, and repeated it in six days. I cannot see the superiority of a race of bees, if they are perfect in other respects, that take to the woods when they should take to the supers, and both the Caucasian and Carniolans will do this, room or no room, shade or no shade, young queen or old.

Sanders, of California, was one of the first to comment on Bonney's article, page 555, American Bee Journal, 1922. This article is written in a convincing way, but the conclusions, so positively drawn, are very misleading, and very questionable. At the outset he tells how little we have accomplished in breeding up bees. Are yields of four and five hundred pounds, and averages of two hundred and better a poor showing? He points out that we have taken dogs and bred numerous fine races without changing their original characteristics. Is it not conceded that all the dogs sprang from the wild wolf? His conclusions in regard to milk cows are just as misleading, even more apparent.

Sanders quotes Dr. Miller's experience with breeding up hybrids, with about this comment: "Dr. Miller spent 50 years in breeding, 40 in selecting a strain that he pronounced hustlers, but after European foulbrood forced him to change to Italians he beat his previous record in a very short time. What can be learned from this?"

Let us just change it a little, using the same facts, and see what can be learned. Dr. Miller had a hobby of breeding his own race of bees from hybrids instead of an established race, and after spending over 40 years at it found, with all his selecting, that Italians were the only race to resist European foulbrood, and in experimenting found the

famous "Miller" (dequeening) treatment for that disease. In a very short time after dropping those hybrids, and adopting an established race of bees he beat the records that it had taken 40 years to establish. The Italians were easily ahead of the best hybrids. Quite a little to learn from one man's experience.

W. E. Joor, in *Beekeeper's Item*, January, 1923, page 13, draws this same conclusion, and shows some of the reason why it is so hard to stabilize traits in breeding bees. He compares results with breeding races of people. But it remains for Mr. Roberts in September *American Bee Journal*, page 459, to show us the faults in Dr. Bonney's article and a lot of other things.

Editorially the *American Bee Journal* said (page 456, 1922) that Bonney was right in his assumption of climate fixing color, that the point was not debatable, but it seems Roberts debated it pretty well, when he got to it. This editorial also agrees with the conclusions of Joor's article, on the results of Miller's experiments with the hybrids. Roberts brings out very plainly the result of the way we are breeding bees as applied to chickens. On the question of mating he applies the same rule, turning loose various breeds of chickens, and attempting to stabilize results by selecting only the females. It goes without question that the fastest, and quickest male will mark the offsprings, but this is far from saying that the fastest and quickest male is the best, be it rooster or drone, or that the offsprings from any of these will be better than if the males were controlled and breeding went on from the choice. I have argued for years for more attention to the drones in bee breeding.

Today only a back number fails to use full sheets of foundation, and with all this foundation, a large percent of beekeepers, and all the bee publications are opposed to even trying to select and breed drones. One neglected hive in a fence corner will raise more drones than a whole modern apiary using up-to-date combs, and hives, and if something goes wrong with the running of this old hive it will supply a liberal amount of drones long after your well regulated colonies have abandoned all drone raising. The only possible remedy for all this is to allow all the best colonies all the drone comb they can use, denying drone comb to only the poor colonies. We have simply got to flood the yard with those choice drones so the poor ones our neighbors rear will be completely outnumbered; and count on the extra amounts of honey we will get by better breeding to offset what those extra drones consume.

I have seen time and again in a well regulated queen yard a little black swarm drift in, when there were no blacks for miles. Of course, it would bring lots of worthless drones, and they will at once scatter

MACK'S QUEENS

Are reared to please you. Customers who purchased our queens sparingly the past season are now sending us orders for 50 and 100 lots. If they did not please, would such customers be so liberal? We guarantee to make you a satisfied customer in every way.

PRICES:

	1 to 49	50 to 99	100 up.
Untested -----	\$1.00 ea.	\$.95 ea.	\$.90 ea.
Select untested -----	1.25 ea.	1.20 ea.	1.15 ea.

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Most Beekeepers' Supply Houses carry "Diamond I" Honey Jars in stock and can supply you promptly with either 1/2 lb. or 1 lb. Jars, complete with tight fitting caps packed in 2 dozen Corrugated Reshipping Cases.

If you are unable to secure these jars from your local distributor, write us direct.

Illinois Glass Company
ALTON, ILLINOIS

1924 PACKAGE BEES 1924

Yancey Hustlers. Three-Band Strain, Only

Our bees are building a reputation as honey-producers in every section of the country. If you are not satisfied with your present strain, order a few packages of the Yancey Hustlers, headed by our select young queens, and we will get your future business. Our motto, "Every Customer a Booster."

Safe arrival and satisfaction guaranteed on every package and queen shipped. We are now booking orders for spring delivery, and will be glad to send you prices and full particulars. No more orders booked than we can fill promptly on dates specified.

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YANCEY BROS., OWNERS

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Write for prices. All orders guaranteed

J. D. SHIELDS
Natchez, Mississippi.



Middle Tennessee Apiaries

Select bred three-band and golden Italian queens will please you. Place your order now for May 1 delivery.

PRICES

	One	Six	Twelve
Untested	\$1.25	\$7.00	\$14.00
Select Untested	1.50	8.00	16.00
Select Tested	2.50	12.00	22.00

Write for circular and prices on large quantities.
All correspondence will receive prompt and careful attention.

MIDDLE TENNESSEE APIARIES, Hardin S. Foster Manager,
Columbia, Tennessee.



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Write to A. L. Rice, Inc., Manufacturers, 23 North St., Adams, N. Y., and a trial package will be mailed to you, also color card and full information showing you how you can save a good many dollars. Write today.

all through the yard. If you have plenty of choice drones on hand in every hive you will get few matings from this drift, but if you have "cut drone comb to the bone," then expect a job of hunting out mismated queens.

When the associate editor of the American Bee Journal was visiting my queen yard I showed him a pure black queen, well established in a little mating nucleus right in the center of a good pure blooded yard of Italians, and there are no colonies of blacks around me for miles, that I know of. It is easy to pinch her head off, but if the yard was short of drones, it would be different. Honey producers argue that they are not queen raisers, but they cannot stop supersedure, and swarming in their yards, and it amounts to more to them directly than it does with the commercial queen breeder, for they use theirs while he sells his.

Some points strike us very strongly in summing up these write-ups. First, any writer is liable to be misunderstood, and his article may give a meaning entirely different from what he intended. Second, it is very plain that there is developing a stronger interest in breeding up bees. Third, we are not doing all that can be done, either in selecting queens or drones. Fourth, nearly all agree that there will have to be more of an attempt made at controlling the mating. This loose breeding of drones is one of the worst factors in scientific breeding today.

Louisiana.

"THE SEWING BASKET LURE"

I was in a very big hurry, and yet I had to stop and gaze—the window of the grocery was piled high with the prettiest Japanese sewing baskets I had ever seen. But what were they doing in the grocer's window? They were being sold for 50 cents, including a cake of honey which was snug-gled away in paraffined paper inside the basket. After the honey was gone, what a nice basket I would have left for my fancywork! I could not resist, so I purchased a basket of honey and just happened to think that auntie had a birthday and she would surely appreciate both the honey and the sewing basket.

Then it was that I noticed the other window contained the ordinary tinned boxes, which were painted in pretty colors and pretty designs. These boxes were ordinarily purchased in the 10-cent store, but when filled with honey were even more attractive, and one could get the cake of honey and the tinned box for just 5 cents more than the price of the honey. The honey gone—lovely containers to send a batch of home-made candies to a friend at a distance. Many other uses might be found for the boxes, too. I also added one of these to my collection and hurried on home.

Luella B. Lyons.

RIGHT ON THE JOB

CONTEMPLATE YOUR NEEDS. INVESTIGATE US. DECIDE TO ORDER EARLY

Many customers are writing us that they are glad to know we are going to supply them again with bees and queens. More than that: we are prepared to take care of more business than formerly.

The combless package we will use this year has long since passed the experimental stage. Used by largest shippers and has stood the test of time. It embodies all desirable features.

We have good stock of Pure Three Band Italians. Selective breeding, with due attention paid to drones as well as breeding queens assure you of satisfaction. A two-frame nucleus, a young queen introduced, laying enroute, \$4.25; a two-pound package with untested queen, \$4.25; a three-frame nucleus, young queen introduced, laying enroute, \$5.25; a three-pound package with untested queen, \$5.25. ORDER 12 or MORE PACKAGES OR NUCLEI AND DEDUCT 23c EACH.

Queens, untested, \$1.00 each; \$11.00 per doz.; \$80.00 per 100. Select untested, \$1.20 each; \$13.00 per doz. Tested, \$1.50. Breeders, \$5.00. We guarantee: Pure mating of queens, safe arrival, and freedom from disease. Yours for a square deal,

JENSEN'S APIARIES, Crawford, Mississippi

PACKAGES

QUEENS THREE BAND ITALIANS

NUCLEI

MR. BEEKEEPER: When you purchase bees in packages or nuclei you expect them to reach you alive and in good condition, do you not? When they arrive dead or in a poor and lifeless condition you are sorely disappointed. Of course dead bees will be replaced, or money refunded, as promptly as possible, but is this always satisfactory to you? You answer "NO." You have bought LIVE BEES, you have prepared to receive LIVE BEES and expect to get LIVE BEES. For several years we have been successful in delivering to our customers LIVE BEES and QUEENS, having delivered hundreds of packages without the loss of a package. Our loss the past season averaged less than one package for each hundred shipped, and they went throughout the United States and Canada. Let us show you how it is done with a trial order.

Prices for April and May Deliveries

Two-pound package with untested queen, \$4.50 each; 25, \$4.00 each; 50, \$3.75 each; 100, \$3.50 each.

Three-pound package, with untested queen, \$5.50; 25, \$5.00 each; 50, \$4.75 each; 100, \$4.50 each.

Two and three frame nuclei same price as two and three pound packages. Safe arrival guaranteed at your express office. Health certificate with each shipment. Send one-fourth amount with order, balance before shipment. Write for prices on queens after June 1st. Let us send you circular and testimonials.

The Cotton Belt Apiaries, Roxton, Texas

MONEY SAVED

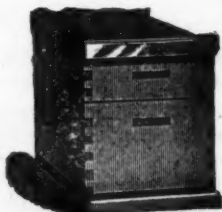
BEE SUPPLIES

TIME SAVED

Root's Goods at factory prices with WEBER'S Service.

Send us a list of your wants and we will quote prices that will save you
money

C. H. W. WEBER & CO., 2163-65-67 Central Ave., Cincinnati, O.



MR. BEEKEEPER—

We have a large plant especially equipped to manufacture the supplies that you use. We guarantee all materials and workmanship. We ship anywhere. We allow early order discounts and make prompt shipments. Write for free illustrated catalog today. We pay highest cash and trade prices for beeswax.

LEAHY MFG. CO., 90 Sixth Street, Higginsville, Missouri
J. W. ROUSE, Mexico, Missouri Texas Distributors, A. M. HUNT & SONS, Goldthwaite, Texas



CARNIOLANS

are very gentle, very prolific, winter extra well, build up rapidly during the spring, and swarm no more than Italians if intelligently managed. Ask for my FREE paper, "MERITS OF THE CARNIOLAN BEE," describing Carniolans more fully, best methods of management for comb and extracted honey. The information in this paper will be helpful to you in making your plans for the coming season.

Later, we can supply queens and bees of our own strain of Carniolans—12 years selection and breeding; JAN STRGAR, CARNIOLA, EUROPE strain. These bees have won 64 prizes in Europe. Breeders imported 1923. ITALIAN, C. B. Hamilton strain. The mother of this breeder produced 577 finished sections of comb honey.

ALBERT G. HANN,
Glen Gardner, NEW JERSEY

From March 1st we will furnish package bees with untested queens, as follows:

One 3-lb. package with queen, \$5.00; 25 or more, \$4.75 each.

One 2-lb. package, \$4.00; 25 or more, \$3.75 each.

Safe arrival and satisfaction guaranteed. Can furnish light 3-band or dark leather colored ITALIAN QUEENS. Ten per cent books your order.

W. H. MOSES & SON,
Lane City, Texas, U. S. A.

PACKAGE BEES THREE-BAND QUEENS

Years of select breeding have brought THAGARD'S ITALIAN QUEENS "BRED FOR QUALITY" fame for their gentleness and honey-producing qualities.

Untested queens, \$1; 12, \$10 each. 2-lb. package, \$4; 25 up, \$3.80, with queen.

THE V. R. THAGARD CO.,
Greenville, Ala.

Booking Orders for May Delivery 1924

My introduced-laying-enroute queens and packages. One good, vigorous young queen, one standard Hoffman frame of emerging brood and adhering bees, and one additional pound of bees. Price complete, f. o. b. Bordeloville, \$5.00.

Additional frames of brood, or additional pounds of field bees to make larger package, \$1.00 each, respectively, in above packages. Bees and queens, Italians. Special discounts given to schools, colleges and church organizations. Queen introduced and laying enroute to you. Health certificate attached. Safe arrival and satisfaction guaranteed. One-fifth cash books order. Send for circular and names of satisfied customers in your state. Complete references given.

JES DALTON,
Bordeloville, La.

Burleson's Three - Banded Italian Bees and Queens

One of the oldest, largest and most successful shippers of combless packages in America, ships only on sugar syrup, and guarantees safe arrival and no brood diseases of any kind. Ten per cent books your order.

2-lb. package, with select untested queen, \$3.75 each; 25 or more \$3.50 each.

3-lb. package, with select untested queen, \$5.00 each; 25 or more \$4.75 each.

T. W. BURLESON,
Waxahachie, Texas.



GRAY CARNIOLANS

are healthy, gentle, extremely prolific, and as honey gatherers are unexcelled. Highly disease resistant, winter admirably and build up very quickly in the spring. Selected breeding mothers imported in 1923 insures the purity of our stock.

Write today for our free 8-page circular, which gives you fully the history, merits, prices of queens, etc., of this hardy race. It is well worth your little trouble.

W. A. HOLMBERG, Denair, California

KILLS THE WEEDS MULCHES SOIL IN ONE OPERATION



HERE'S the machine that thousands of practical gardeners use. Does the finest work, and is much easier and faster than any other tool.

BARKER Weeder, Mulcher and Cultivator

Eight revolving blades working in combination with the underground knife destroy the weeds and in the same operation chop the crusted surface into a level, moisture-retaining mulch. Intensive cultivation. "Best Weed Killer Ever Used." Cuts runners. A boy can use it, and do more and better work than 10 men with hoes. Has leaf guards; also shovels for deeper cultivation. Inexpensive. A postcard to us brings you full particulars. Book and our Factory-to-User offer.

BARKER MFG. CO.,
Box B David City, Neb.



FREE BOOK contains information of value to every gardener, describes the BARKER, tells what users say, gives prices delivered, etc.



WRITE TODAY
FOR BOOKLET FREE

California Honors Veterans

At a recent session of the California State Beekeepers' Association it was unanimously voted to elect T. O. Andrews and J. E. Pleasants as honorary presidents of that organization. This is a fitting honor to bestow upon men who have done so much to make beekeeping an important industry in the western state.

AMERICAN HONEY PRODUCERS' LEAGUE

The American Honey Producers' League held its annual convention on January 24 and 25, at the Great Northern Hotel at Chicago. President H. F. Wilson was in the chair and presided in his usual forceful manner.

Dr. E. F. Phillips reported in full on the progress of Standardization Committee and submitted to the convention samples of honey in correct size bottles. A suitable liquid to represent the different grades of honey as to color and density will be submitted as soon as found entirely satisfactory. The report showed careful, painstaking work on the part of the committee.

The need of a bonding system of queen and bee breeders was discussed from a legal standpoint by Colin P. Campbell. A. M. Black, of the National Surety Company, of Chicago, outlined two or three definite plans for the protection of breeder and customer. The matter was referred to the Legislative Committee for final action.

Prof. H. F. Wilson and Prof. S. B. Fracker gave interesting talks on the progress of the League. Also on honey selling campaign in Wisconsin and the advertising carried on by that State Association.

J. V. Ormond, of Elba, Ark., lectured on a comprehensive selling program. He pleaded strongly for maintenance of prices by beekeepers throughout the United States.

B. F. Kindig brought to the attention of the convention the need of a national disease control. He stated that the United States Department of Agriculture was about to complete projects in the eradication of other diseases and pests and that the time is opportune for the beekeepers to get the help of the Department of Agriculture in eradicating foulbrood. On motion, a special committee consisting of B. F. Kindig, C. P. Campbell and E. R. Root, was appointed to look after this problem.

After much discussion it was voted to open the membership of the League to any beekeeper who would send in \$1.00 as yearly dues.

The following officers were elected:

B. F. Kindig, President.

C. P. Campbell, Vice-President.

E. S. Miller and H. F. Wilson, Executive Committee.

The officers of the American Honey Producers' League have promised the American Bee Journal to submit for publication a report of the work that has been accomplished by the American Honey Producers' League in the past, also a report of its aims for the future. These points, when set forth clearly, will show the value of the American Honey Producers' League to beekeepers as a whole and individually.

FORDS run 34 Miles



(on Gallon of Gasoline)
Low Gear Seldom Used

With Air-Friction Carburetor

Guaranteed to reduce gasoline bills on any car one-half to one-third and increase power of motors 30 to 50%. Makes old cars better than new.

Sent on 30 Day's Trial

Fits any car. Attach yourself. Starts easy in cold weather. No shifting of gears in slow moving traffic. Send make of car and take advantage of our special 30-day trial offer. Agents Wanted.
AIR-FRICTION CARBURETOR CO.
367 Raymond Bldg. Dayton, Ohio

GLADIOLI AND DAHLIAS

50 blooming gladioli bulbs, superior, \$1.00. Write for catalog of the better kinds.

W. H. TOPPIN,
Merchantville, N. Y.

GOLDEN QUEENS AND THREE-BANDED BEES FOR 1924

1 untested queen	\$1.00
1 tested queen	1.50
1-lb. package of bees	2.00
2-lb. package of bees	3.00
3-lb. package of bees	4.50
Nucleus, per frame	1.50
Additional pound of bees with nucleus	1.00
No disease; safe arrival guaranteed; bees inspected.	

J. W. SHERMAN, Valdosta, Ga.

PACKAGE BEES

Two and three pounds

We do not claim that our Italian queens and bees are the best, but we do claim that they are as good as any. To prove our assertion, give them a test.

Receive fresher bees, and save express charges.

Circular free.

VAN'S HONEY FARMS
Hebron, Indiana

JAY SMITH

HIGH GRADE

ITALIAN QUEENS

Route 3, Vincennes, Indiana.
A card will bring our catalog.

1924 PRICE LIST OF BEES AND QUEENS

A 1-lb. pkg. and unt. queen, delivered	\$3
A 2-lb. pkg. and unt. queen delivered	\$4.50
A 2-fr. Nuclei with unt. queen, delivered	\$6
Same as above, with test. queen deliv.	\$7

Strictly nothing but pure Italians shipped. Untested Queens, \$1 each, or 12 for \$10. In lots of 100, 75c each.

Remember, 16 years the home of the Golden Bees. **R. O. COX, Rutledge, Ala.**

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies

Write for our terms and prices

"falcon" Supplies, Queens, Foundation

Booklet, "Simplified Beekeeping for Beginners" free

Write for catalog

W. T. FALCONER MFG. COMPANY, Falconer, (NEAR JAMESTOWN) N. Y., U. S. A.

"Where the BEST Beehives come from"

ROADSIDE STANDS

PREPARE FOR SPRING BUSINESS

Glass and Tin Honey Containers

2 1/2-lb. cans, in crates of 100	\$4.00 a crate
5-lb. pails, in crates of 100	7.00 a crate
10-lb. pails, in crates of 50	5.25 a crate
60-lb. tins, used, good conditions, 2 tins per case	.25 a case
60-lb. tins, new, 2 tins per case	1.00 a case

Glass Jars with Gold Lacquered, Wax Lined Screw Caps

8-oz. honey capacity, 3 doz. per carton	\$1.50 per carton
16-oz. honey capacity, 2 doz. per carton	1.30 per carton
3-lb. or quart capacity, 1 doz per carton	1.00 per carton

HONEY

White Clover Crystallized in 60-lb. tins-----13c lb.

L. A. Clover Crystallized in 60-lb. tins-----12c lb.

HOFFMAN & HAUCK, Inc., 1331 Ocean Ave., Woodhaven, N. Y.



ITALIAN QUEENS



FOR 1924 OUR OLD RELIABLE THREE-BANDED ITALIAN QUEENS will be shipped from one of the largest and best equipped queen-rearing yards in the SOUTH.

We have bought the queen-rearing department of one of the largest beekeepers of the state and have added it to ours, which will enable us to put out double the amount of queens as heretofore.

We are now booking orders for spring delivery, one-fourth cash. Safe arrival guaranteed in U. S. and Canada. Circular free.

Untested, \$1.25; 6, \$6.50; 12, \$12. Tested, \$2.50; 6, \$14. Select Untested, \$1.50; 6, \$8; 12, \$15. Select tested, \$3 each

If you once try our queens, you will always use them.

JOHN G. MILLER, 723 C STREET, CORPUS CHRISTI, TEXAS

VALUE RECEIVED

FRANK H. DREXEL

FRANK H. DREXEL

CLARENCE E. DREXEL

FRANK H. DREXEL & SONS

ESTABLISHED 1894

SHIPPING POINT
HOTCHKISS, COLO.

SPECIALISTS IN BEEKEEPING

FOR THE PRODUCTION OF
HIGH GRADE
HONEY

CRAWFORD, COLORADO

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der deal.
all at its
wax to make up
et us hear from

Since writing you last we have put up 200 hives .
and are now putting together the necessary frames for these hives.
The hives fit fine and present a very attractive appearance.
But we are even better pleased with the frames. So far as we
are aware these are by long odds the best frames yet. They are
strong in construction, well finished, of excellent material and
as we see it the best ever. When well nailed such a frame should
last twenty five years and longer. After working over several
hundred of some real old stagers of twenty five years ago these
new frames loom up something like the big Jumbo might alongside
of a Clarke's Cold Blast of ancient times. A set of these frames
well wired and filled with sheets of the 3ply AIRCO foundation
should please any colony of bees in the world and stir them up
to best efforts.

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hive out
We hav
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Yours very truly
Frank H. Drexel & Sons.

Frank H. Drexel

Root Guaranteed Hives

1. Soft, well-dried western pine
2. Carefully selected material
3. Excellent workmanship

Root Hoffman Frames

1. Insured accuracy and uniformity
2. Rigid corners afford greater protection
3. Labor saved in assembling

Are You Getting Your Dollar's Worth?

THE A. I. ROOT CO. OF IOWA
COUNCIL BLUFFS, IOWA

Crop and Market Report

Compiled by M. G. Dadant

For our Crop and Market Report we asked reporters to give answers to the following questions: 1. How much of the crop remains on hand? 2. Will all be sold before new crop comes in? 3. What is condition of bees? 4. What is condition of plants? 5. Are beekeepers optimistic or pessimistic for 1924 honey crop and prices?

CROP ON HAND

As suggested before in this page, there seems little likelihood of much honey being carried over into the new crop year.

Throughout the entire South and Southeast and including Texas, Arizona and New Mexico, the crop might be called all gone, as there is scarcely any honey left in the hands of producers or distributors.

The northeastern section of the country has possibly 10 per cent of the crop left on hand, but this will be disposed of readily before the new crop arrives.

In Michigan there are a few large lots which still remain in the hands of the producers, but these should move without difficulty before long.

There is also, as compared with former years, very little honey left in the Inter-mountain territory.

We have record of one car in Wyoming which is being held at 10c per pound, three or four cars in Montana, for which 9½c is wanted, and possibly seven or eight cars in Idaho for which they are asking at least a price of 9c per pound.

In addition, there is considerable extracted honey yet on the western slope of Colorado. There is also some little quantity in the state of Washington.

Utah and Nevada report honey well cleaned up, as does California, Oregon and Wyoming.

All in all, there seems to be very little honey left, and the demand is much better than a month ago. Undoubtedly the dealers in honey, and bottlers, will not carry over as much as they did in 1923.

CARRY-OVER

Even those reporters who had cars of honey on hand did not seem pessimistic as to the ultimate sale of this honey before the new crop arrives. Our notations on this subject would show that everyone is sure that the old crop will be gone before the new crop comes on the market.

CONDITION OF BEES

In the southeastern part of the country the bees are generally in good shape, although short of stores. This applies generally all over the country, as the warm fall we had induced the bees to use up large quantities of honey and many will probably be short in the spring.

However, the possibility of an early spring and an opportunity to examine the bees early should allow the beekeeper to overcome this objection and feed sufficient in the spring to carry the bees on through until the crop.

CONDITION OF PLANTS

Plant conditions are very spotted, although very much better than they were a year ago. Most of the northern half of the country has had abundant snows and considerable moisture all through the fall, so that the clover prospects should be fairly good.

We find some sections of Pennsylvania, New York, Wisconsin, Minnesota, and also a portion in Missouri, southern Illinois, etc., complaining of insufficient moisture.

This is also especially true of California, where they are suffering from the drought. It would appear that they would not have any early honey except the orange blossom unless we have abundant rains within the next

few weeks. There seems to be gradual pessimism developing among the California beekeepers, though some of the old-timers are still awaiting and hoping fervently that the rain will come to break the drought. This is true especially of southern California, northern California having had considerable rain.

As contrasted to California, Texas reports extremely optimistic conditions. Rains have been plentiful, the nectar-producing shrubs and trees and plants are in excellent condition for a heavy blooming period and the honey crop is also well disposed of. All in all, the conditions are very optimistic there and as they are in practically all parts of the South.

As several reporters expressed themselves, everyone seems to be optimistic as to the crop, but rather pessimistic as to price.

It would hardly seem likely that prices will rule as high in 1924 if a large crop develops as they did at the close of 1923 with a very short crop.

We call the attention of our readers to the specific problem which is always before the American beekeepers and which has not yet been solved, and that is the problem of marketing the crop at a desirable and uniform price.

As one reporter expressed it, "as yet nothing has been definitely established to stabilize prices." He is exactly right, although there has been considerable agitation for uniform prices and also efforts at co-operating in many states, yet the conditions are very unsettled. This would show the fact that there was considerable price cutting in such states as Wisconsin, where efforts for co-operation in marketing are especially forward.

We know of a similar instance in Illinois, where one beekeeper sold honey in 5-lb. pails at the stores for a price of 50c per pail. He could easily have gotten as much, and probably 1c to 2c more per pound if he had packed his honey in 60-lb. cans and sold all in one big lot.

We can hardly agree with the pessimist, as most of us who are in beekeeping do not expect to quit the business, but have a fond attachment for it which will overbalance considerable in a financial way.

I believe, therefore, that the solution for the beekeeper is to work as hard as he can for desirable marketing and a desirable price, and furthermore to get his production to the point where the cost of production can be materially reduced. If this is the case, then he can make a margin and still accept a lower price, should such rule.

COMB HONEY

One point which has seemed a little peculiar to the writer is the fact that comb honey has not been in better demand. This is especially true in the smaller cities. I have in mind several lots of comb honey, say of 50 to 200 cases, which are still not disposed of, although some of the larger city markets are bare. However, several reports from other sources would indicate that the demand for comb honey is not as heavy as it has been in past years.

In view of these facts it is questionable whether there should be a reversion to comb honey production, as has been suggested in some localities. Most assuredly such comb honey production should not be carried except in the favorable regions where comb honey can be produced to distinct advantage, such as the Inter-mountain territory and some sections of the North. There will, of course, always be large quantities of comb honey to supply the smaller markets on the part of the smaller beekeepers who do not desire to produce extracted honey nor go in for the expensive equipment necessary for it.

All in all, beekeepers need to be optimistic as to honey production for 1924, with a question mark as to just where the price will stabilize. Many consider that the present prices will rule, a very few hope for an advance, and many look for a slight falling tendency.

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

BEEES AND QUEENS

HONEY IN PAILS—

Atwater, Meridian, Idaho.

BEAR'S MOUNTAIN BRED BEES—

Hinton, West Virginia.

BEFORE placing your order for bees and queens for 1924 delivery, write to us for special prices on quantity lots.

The Stapleton Apiaries, Colquitt, Ga.

PACKAGE BEES—Circular free.

Van's Honey Farms, Hebron, Ind.

PACKAGE BEES, NUCLEI AND QUEENS—

Let us quote you.

J. J. Scott, Crowville, La.

"BEAR'S BEST BEES"—One-frame nucleus, with one pound of bees and tested queen, \$5.00; two-frame nucleus, \$6.00. Send for circular.

Hiram H. Bear, Hinton, W. Va.

FINEST ITALIAN QUEENS—\$1.00 each. Booking orders.

Wm. R. Stephens, Wingate, Ind.

TRY PETERMAN'S QUEENS—They are 100 per cent quality, select, thrifty layers, well laid up before caging, bred from Jay Smith choice breeders by a thoroughly experienced breeder who is absolutely honest and reliable. Repeat orders prove this. Circular free. Prices: 1, \$1.25; 6, \$7.00; 12, \$13.00; 25 at \$1.00 each; 100, 90c each. H. Peterman, Lathrop, Calif.

BEEES BY THE POUND; also Queens—Booking orders now. Free circular gives prices, etc. See larger ad elsewhere. Ault Bee Co. (Successors to Nueces County Apiaries), San Antonio, Tex. E. B. Ault, Prop.

SEE our display advertisement on page 113. Loveitt Honey Co.

MERRILL'S QUEENS—\$1.00 each.

R. E. Merrill, Muncy, Pa.

HARDY ITALIAN QUEENS—\$1.00 each.

W. G. Lauver, Middletown, Pa.

SEE my display ad., page 134.

Jes Dalton, Bordelonneville, La.

GOLDEN ITALIAN QUEENS—Producing bees solid yellow to tip from record honey gathering breeders. Package bees and nuclei. Circular 1924 ready.

Dr. White Bee Company, Sandia, Tex.

PINARD'S quality queens and package bees. Now booking orders for 1924. Circular free. Yours for better bees.

A. J. Pinard, Morgan Hill, Calif.

GOLDEN and three-band queens reared in separate yards; booking orders for 1924. Untested, one, \$1.25; doz., \$11.50. Safe arrival guaranteed in U. S. and Canada. Tillery Bros., R. 5, Greenville, Ala.

I AM booking orders for spring delivery. 3-frame nuclei and queens at reduced price. Caucasian or Italian race. No disease. Peter Schaffhauser, Havelock, North Carolina.

FOR SALE—Big, strong nuclei, June or July delivery. Three frames with vigorous young queen at \$4.75 each; ten, \$42.50. The Foster Honey Company, Boulder, Colo.

BEEES AND QUEENS—Two-pound package of hybrid bees with untested pure Italian queen, \$4.00; 10 or more, \$3.75 each. Prices on other size packages for the asking. No disease. Satisfaction guaranteed.

Brazos Valley Apiaries, H. E. Graham, Prop., Gause, Texas.

PACKAGE BEES AND QUEENS—Delivered. Bright Italian. Two-pound packages with selected untested queen, 1 to 5, \$4.75; 5 to 25, \$4.60; 25 to 50, \$4.40; 50 or more, \$4.25. Selected untested queens, 1, \$1; 12, \$10. Safe arrival and satisfaction guaranteed; no disease; ship nothing but the best; 20 per cent cash books order. Begin shipping April the 15th.

W. C. Smith & Co., Calhoun, Ala.

THREE-BAND Italian queens for 1924. Tested, in May and June, \$2 each. After June, \$1.50 each. Untested, in June, 1, \$1.25; 6, \$6.50; 12, \$12. Untested, after June, 1, \$1; 6, \$6; 12, \$9. Write for prices on lots of 100 or more. Capacity 1,000 queens per month, and each queen guaranteed in every way; 10 per cent books orders for future delivery.

J. F. Diemer, Liberty, Mo.

PACKAGE BEES, Nuclei and Queens for 1924. Send for circular.

Allen Latham, Norwichtown, Conn.

FOR SALE—Two-frame nucleus Italian bees and queen, \$4.00. Booking orders now for early May delivery. Guarantee satisfaction.

J. G. Prosser, 201 Fifth Ave., N., Ft. Dodge, Iowa.

FOR SALE—15 more colonies of bees in new hives; also, 5 h. p. gasoline engine, small feed mill, and small farm machinery, cheap. Maplewood Apiaries, Dubuque, Ia.

BRIGHT ITALIAN QUEENS—1, \$1.00; 12, \$10.00; 100 \$75.00. Write for prices on package bees.

T. J. Talley, Rt. 3, Greenville, Ala.

SPECIAL—Two pounds Italian bees shipped on a frame emerging brood and honey, queen introduced and laying, \$4.75. Write for regular package and nuclei prices. Select untested bright Italian queens, \$1.00. Health certificate with all orders. Safe arrival, good service and satisfaction guaranteed.

Tupelo Apiaries, J. L. Morgan, Apalachicola, Fla.

FOR SALE—Italian bees and queens. One-pound package with untested queen, \$2.50; 2-lb. package with untested queen, \$3.50. Queens, untested, up to May 15, \$1.00 each.

O. P. Hendrix & Son, West Point, Miss.

ORDERS have been coming in briskly for packages, but I have a few more that I can spare. A card will bring my circular and price list.

R. V. Stearns, Brady, Texas.

GOLDEN ITALIAN QUEENS, producing bees solid yellow to tip. Selected untested, \$1.00; tested, \$2.00. Disease free; safe arrival and satisfaction guaranteed.

H. G. Karns, Victoria, Va.

NORTHERN BEES PAY—Fresh, active bees, less express, 2 lbs. with select queen on frame of foundation, \$5.75. May delivery. Scott Apiaries, La Grange, Ind.

FOR SALE—Golden Italian queens. Untested, \$1.00; 6 for \$5.50; 12 or more, 80c each; tested, \$1.50; select tested, \$2.50 each. Write for prices on large quantity. No disease of any kind. Safe arrival and satisfaction guaranteed.

Sam Hinshaw, Randleman, N. C.

BEEES FOR SALE—40 colonies in nearly new 8-frame hives, priced right.

Fred Hankins, Rt. 4, Kinmundy, Ill.

DIXIE MAID—Bright Italian queens. Select untested, \$1.25 each; \$12.50 per dozen; untested, \$1.00 each; \$11.00 per dozen; 2-lb. package with queen, \$5.00. Write for special prices on large orders.

F. B. Skinner, Greenville, Ala.

BUY your package bees and nuclei, with queens introduced and avoid loss. Best pure mated Italian queens guaranteed. State inspected. No disease. References.

A. O. Smith, Mt. Vernon, Ind.

FOR SALE—Bees in two-pound packages, with pure Italian queens. Certificate of inspection with each shipment. Write for prices. Satisfaction guaranteed.

J. L. Leath, Corinth, Miss.

WE WANT you to remember us when you think of getting those queens a little later on. Will have a lot of nice ones at reasonable prices.

R. V. Stearns, Brady, Texas.

GET THE BEST—Package bees, 1924 delivery, ready April 20; bright three-banded Italian bees and queens 2-lb. package bees with untested queen, \$4.50; 25 or more, \$4.25. Untested queens, \$1.00 each; 25 or more, \$80.00 per hundred. Tested queens, \$1.50 each; 25 or more \$1.25 each; also limited amount of hybrid bees; 2-lb. package with bright 3-banded Italian queen, \$3.50; 25 or more, \$3.25. Ten per cent with order, balance fifteen days before bees are to be shipped. I guarantee safe delivery and no disease.

H. M. Rains, Gause, Texas.

FOR SALE—Carload of bees, also nuclei and pound packages of hustling 3-band Italians. 3-pound package with queen, \$5.00; 2-pound package with queen, \$3.75; 3-frame nuclei with queen, \$5.00; 2-frame nuclei with queen, \$3.75. Untested queen, one, \$1.00; 12, \$11.00. Orders booked free.

W. E. Buckner, Mt. Vernon, Ga.

GOLDEN ITALIAN QUEENS—Untested; about May first, \$1.00; 6 for \$5.40; 12 or more 80c each. Tested, \$1.50. Select tested, \$2.50. I can mail tested and select tested of last fall's rearing as soon as the weather will permit. No disease, good queens, safe arrival and satisfaction guaranteed.

D. T. Gaster, Randleman, N. C., R. 2.

GOLDEN THREE-BANDED and Carniolan queens. Tested, \$1.00; untested, 75c each. Bees in 1-pound package, \$1.50; 2 pounds, \$2.50; 3 pounds, \$3.25. Safe delivery guaranteed. C. B. Bankston, Box 65, Buffalo, Leon Co., Texas.

BREEDER of fine Italian queens.

C. B. Saunders' Apiaries, Merom, Ind.

FOR SALE—Big, strong nuclei, June or July delivery. Three frames with vigorous young queen at \$4.75 each; ten, \$42.50. The Foster Honey Company, Boulder, Colo.

PACKAGE BEES AND THREE-BAND ITALIAN QUEENS—That please and give results. Selective breeding does tell. We have been rearing them here for the past nineteen years. No brood diseases in this section. Write for prices.

Allenville Apiaries, Allenville, Ala.

CARNIOLAN QUEENS—I will breed from imported mothers of pure Alpine stock. I have Lockhart's best select breeding strain for their support. No better combination could be arranged. Price: One select untested, \$1.10; six, \$1.00 each; twelve, 90c each, and twenty-five or more, 80c each. My circular treats of the Carniolan bees, rearing their queens, introducing the queens, and other matter that might interest you.

M. G. Ward, Lathrop, Calif.

FULL COLONIES and guaranteed Italian queens. A limited number for sale this spring. Write for prices.

Matthew Apiaries, Virginia, Ill.

PACKAGE BEES from healthy stock. Bargain prices. Circular on same.

M. G. Ward, Lathrop, Calif.

PACKAGE BEES & QUEENS—Italians or Carniolans. I can save you express charges. See larger advertisement for prices.

J. E. Wing, San Jose, Calif.

GOLDEN ITALIAN QUEENS for 1924. The big, bright, hustling kind. Satisfied customers all over the U. S. Untested \$1.00 each, 6 for \$5.00, 12 for \$10, 100 for \$75.00; tested, \$1.75. A few two-frame nucleus at \$4.50, with queen.

E. F. Day, Honoraville, Ala.

TRY our Golden Queens. They are gaining popularity each year. Satisfaction and safe arrival guaranteed. Price \$1.25 each, \$11.00 per dozen.

Honoraville Bee Co., Honoraville, Ala.

HONEY AND BEESWAX

HONEY IN PAILS—

Atwater, Meridian, Idaho.

40 CASES fancy No. 1 white clover comb honey, \$5.50 per case. 24 sections per case. Winkler Honey Co., Joliet, Ill.

FOR SALE—Choice clover extracted honey in new 60-lb. cans. Also a few cases of amber honey. Write for price, stating quantity desired. J. D. Beals, Oto, Iowa.

FOR SALE—Choice extracted honey.
C. F. Sager, Chillicothe, Ill.

CHOICE extra fancy white clover honey in new 60-lb. cans; 120 lbs. net, \$14.00. Sample 20c.
Edward A. Winkler, Joliet, Ill., R. No. 1.

FOR SALE—Comb and extracted white clover honey. Extracted in 60-lb. cans, 5 and 10-lb. pails. Prices given on request. Sample 15c. F. W. Summerfield, Waterville, Ohio.

BEEWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station, as you may desire.
Dadant & Sons, Hamilton, Ill.

HONEY FOR SALE—In 60-lb. cans; clover-basswood. State quantity wanted. Sample 15c.
Edw. Hassinger, Jr., Greenville, Wis.

TWO HUNDRED 10-lb. lithographed pails of white clover honey. Write for prices.
W. Ritter, Genoa, Ill.

FOR SALE—White and amber extracted honey. Write for prices. State quantity wanted. Dadant & Sons, Hamilton, Illinois.

FOR SALE—White honey in 60-lb. cans; also West Indian in 60-gal. barrels. Samples and prices on request.
A. I. Root Co.,
23 Leonard St., New York City, N. Y.

1923 CROP clover honey in 60-lb. cans, also 5 and 10-lb. pails. Prices upon request. Sample 10c.
Sioux Honey Association, Box M. 26,
Sioux City, Iowa.

HONEY FOR SALE—In 60-lb. tins; white clover, 13c, for immediate shipment from New York
Hoffman & Hauck, Woodhaven, N. Y.

FOR SALE—Choice white clover and milkweed honey in 60-lb. cans. Sample and prices on request. Ralph Lenosky, East Jordan, Michigan, R. No. 5.

SEE our display advertisement on page 113.
Loveitt Honey Co.

I HAVE HONEY at all times. Write me for prices. State quantity, flavor and color wanted.
Chas. M. Boothby, Griggsville, Ill.

VERMONT CLOVER COMB HONEY—200 cases No. 1 fancy $4\frac{1}{4} \times 1\frac{1}{2}$ plain sections, 24 to case, six cases to the carrier. Very fine lot and carefully graded.
J. E. Crane & Son, Middlebury, Vt.

FOR SALE—Choice clover extracted honey in new 60-lb. cans, cases of 12 5-lb. pails and cases of 6 10-lb. pails. Sample and prices on request.
C. J. Canniford, Winnebago, Ill.

FOR SALE—White clover honey in new 60-lb. cans, 11c per pound. Sample, 20c.
HoeHN & Honingford, Ottoville, Ohio.

SUPPLIES

BEAR'S MOUNTAIN BRED BEES—
Hinton, West Virginia.

SOUTHWESTERN distributors for Robinson's comb foundation. Send for price list.
Holloway Bros., Marietta, Okla.

ROBINSON'S comb foundation will please the bees, and the price will please the beekeeper. Wax worked at lowest rates.
E. S. Robinson, Mayville, N. Y.,
Chau. County.

SPECIAL PRICES—We are offering at specially low prices some very high grade material in shipping cases, frames, hives and miscellaneous which represent items we no longer carry regularly in stock or which have to be closed out to make room for new stock specially equipped to take Dadant's Wired Foundation. If interested, write for list; we can save you money.
Dadant & Sons, Hamilton, Ill.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list.
American Bee Journal, Hamilton, Ill.

CONNECTICUT and Rhode Island headquarters for Root's Beekeepers' supplies.
A. W. Yates, 3 Chapman St., Hartford, Conn.

ATTRACTIVE LOW PRICES—Write us for list of odds and ends, shipping cases, hives, etc., first grade, priced to save you money.
Dadant & Sons, Hamilton, Ill.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list.
The Colorado Honey Producers' Association,
Denver, Colo.

IDAHO White Pine Bee Supplies. Select material. Excellent workmanship. Prices low. Satisfaction guaranteed. Write for sample and prices.
John E. Thomson, Coeur d'Alene, Idaho.

FOR SALE—New white pine 8 or 10-frame $1\frac{1}{2}$ -story hives. Shipped K. D., \$2.25 and \$2.60 f. o. b. Berlin.
Clarence Erdman, Rt. 1, Box 72, Berlin, Wis.

FOR SALE—15 Modified Dadant one-story hives, new and painted; full sheets wired foundation unused, with metal covers. Complete cost, \$9.95 each; sell for \$75.00 entire lot, f. o. b. Also 25 10-frame Root hives complete with drawn foundation, wired, metal cover at \$4.00, each used three years.
Spahn Bros., Pleasantville, N. Y.

FOR SALE OR EXCHANGE FOR PACK-AGE BEES—Neat home-made 10-frame extracting supers, nailed and painted white. Lots 50 to 100, \$40 per hundred, with unspaced frames, \$77 per hundred.
Henry Eggers, Birchwood, Wis.

FOR SALE—Twenty 4×5 section supers, 10-frame with fittings, knocked down. Root goods. Latest style. In original crates just as received from factory, \$6.90 per crate of 5; also 15 colonies bees in standard 10-frame hives.
Merton Church, Highland Park, Ill.

FOR SALE—Standard dovetailed beehives and supers. Prices reasonable.
Thos. Cordner, Sparta, Wis.

I CAN save you money on bee supplies. Write for prices.
E. G. Lewis, Beeville, Texas.

JUMBO Standard Hives, painted; wired foundation; bargain.
Lewis Huff, Salem, Ind.

100 WOODEN CASES in flat for 10-lb. pails at 25c each.
Harry R. Fisher,
303 S. 8th St., Montrose, Colo.

FOR SALE—Used hives, clean, telescope covers.
P. S. Crichton,
47 Alma Ave., Waverley, Mass.

FOR SALE

FOR SALE—A few bee books, cheap. Write for prices and descriptions.
Sherman Goodlander, Wabash, Ind.

HONEY IN PAILS—
Atwater, Meridian, Idaho.

SEE our display advertisement on page 113.
Loveitt Honey Co.

FOR SALE—Good second-hand 60-lb. cans, 2 cans to a case, boxed, at 60c per case, f. o. b. Cincinnati. Terms cash.
C. H. W. Weber & Co., 2163 Central Ave., Cincinnati, Ohio.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request.
Dadant & Sons, Hamilton, Ill.

FOR SALE—Soiled cane sugar for feeding bees. Get your supply now for spring feeding.
Winkler Honey Co.,
Joliet, Illinois, R. No. 1.

FOR SALE—A very fine quality, light amber extracted honey; \$13.00 per case of two 60-lb. cans.
J. G. Burtis, Marietta, N. Y.

FOR SALE—60 to 100 colonies of mostly Italian bees; everything up to date; no disease. Write for particulars.
Duane Shaw, Palestine, Ill.

FOR SALE—Pure beeswax rendered from cappings 1923 crop.
Winkler Honey Co., Joliet, Ill.

FOR SALE—100 colonies of bees in new 10-frame hives with metal covers, together with 150 deep 10-frame extracting supers with combs; also 80-acre farm with bee house 20x44, with cellar.
Chester E. Keister, Orangeville, Ill.

FOR SALE—60-lb. cans, used once, washed outside, good cases, 50c per case of two, if taken at once, f. o. b.
Brunner, The Beeman,
3836 N. Kostner Ave., Chicago, Ill.

FOR SALE—Will sell from one to 75 colonies Italian bees, 10-frame hives, metal covers and one super each. Stock from the best breeders in the country, on wired frames and full sheets foundation. Guaranteed free from disease. Will ship any time buyer wishes in spring. Reason for selling, have more than I can keep in one yard. Price \$10.00 f. o. b.
Bert Gander, Bayard, Iowa.

FOR SALE—20 colonies bees and equipment; a bargain. Write me.
O. H. Ford, Mishawaka, Ind.

FOR SALE—First reasonable offer buys 50 two-story 8-frame hives of bees—Italians—on nice, straight, wired full sheets of Dadant's foundation. Fifty bodies, with frames and 75 4-inch supers for same. Other business takes all of my time. Above nicely painted, in first-class condition.
J. V. Higgins, Florence, Ala.

FOR SALE—Bargains, near Nashville, Tenn., about 20 colonies of bees in very good shape; no disease. Abundant equipment for handling same. 150 cases used 60-lb. cans, 25c per case. At Allensville, Ky., 150 brood chambers with drawn brood combs, \$2.50 per body; 35 bodies with drawn combs, suitable for extracting only, \$1.50 per body; 60 empty shallow supers, 25c each; 25 empty deep supers, 50c each; 50 wood-wire excluders, 40c each; 85 metal covers with super covers, 70c each; 45 good bottoms, 25c each; 25 extra good bottoms, 35c each; 14 bodies with empty frames, L. depth, 70c each. All the above standard Root 10-fr. goods, in splendid shape. Am changing to different hive. No disease.
Porter C. Ward, Elkton, Ky.

\$12,325—500 colonies, extracting equipment, 6 acres highly improved homesite; good buildings.
C. C. Baker, Ellensburg, Wash.

FOR SALE—120 acres irrigated unimproved land in Wyoming, \$30 per acre. Will grow 500 tons alfalfa per year. Easy terms. Would accept some bees in 10-frames or larger equipment on this.
Asher F. Dillard, Walthill, Neb.

FOR SALE—Guaranteed genuine, pure, scarified Hubam clover seed, Northern grown. Prices on request.
Edw. A. Winkler, R. No. 1, Joliet, Ill.

FOR SALE—40-acre apiary, new buildings, semi-modern house, good water.
Edw. Wilbrecht, Preston, Minn.

FOR SALE—One to fifty colonies bees in ten-frame hives; several wood wire excluders and much other desirable bee fixtures. A. W. Smith, Birmingham, Mich.

FOR SALE—225 colonies bees in good condition, in Pierce County, Washington. Write for full information and price.
Virgil Sires Bee Farms, Yakima, Wash.

MISCELLANEOUS

HONEY IN PAILS—
Atwater, Meridian, Idaho.

BEAR'S MOUNTAIN BRED BEES—
Hinton, West Virginia.

WILL TRADE package bees for white honey. Mail sample.
Van's Honey Farms, Hebron, Ind.

WRITE for application blank if your education, business experience and beekeeping knowledge would make you available for positions in our sales and warehousing organization. Address Box 377, care American Bee Journal.

THE BEE WORLD—The leading bee journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers. The Apis Club, Benson, Oxon, England. Send us a post-card today. It is well worth your little trouble.

PLANS FOR POULTRY HOUSES—All styles; 150 illustrations; secret of getting winter eggs and copy of "The Full Egg Basket." Send 25 cents.

Inland Poultry Journal, Dept. 56.
Indianapolis, Ind.

THE "Archiv fur Bienenkunde" is a valuable scientific publication. "It merits the appreciation of all beekeepers acquainted with the German language," says the Bee World (January, 1923). "The Archiv fur Bienenkunde, now in its fifth volume, is of as high grade as any bee journal which comes from abroad, dealing especially with the scientific aspects of beekeeping," says Gleanings in Bee Culture (February, 1923). Annual subscription, \$1. Specimen copy free. Publisher, Theodor Fisher, Freiburg im Breisgau, Kirchstrasse 31, Germany.

LONESOME?—Then get "a date with your honey" and enjoy the evening. Meet the rest of the family of Hon-E-Nut Chocolates. You'll like them all. \$1.00 per pound post-paid. Chocolate beehives full of honey and nuts, two for 25c or \$1.10 per dozen, post-paid. Fairmount Apiaries, Schuylkill Haven, Pa.

YORK'S BEES AND HONEY, monthly, edited by George W. York, Spokane, Wash. Sample free, on request.

I WILL TRADE some supplies for honey. Please send sample of honey and state what you need.

Chas. M. Boothby, Griggsville, Ill.

WANTED

WANTED—To exchange bees for Barnes saw and typewriter in good condition.
W. E. Buckner, Mt. Vernon, Ga.

WANTED—Employment with beekeeper by able-bodied man. Weight 150 pounds. Some experience. Small wages.
J. G. C., Care American Bee Journal.

WANTED—Situation as helper in well-equipped apiaries, for coming season, by young man of good habits and character. Would prefer offers from Montana, Idaho, or Wyoming. Have had one year's experience. Edwin Timmons, Fromberg, Mont.

WANTED—Experienced beeman to take charge of 500 colonies.
W. J. Stahman, Clint, Texas.

WANTED—Section honey, both finished and unfinished; also bulk comb honey. State net weight and lowest price.
Fred E. Hyde, New Canton, Ill.

WANTED—Young lady to assist with bees and queen yard work. Fine opportunity to learn. Board furnished. Give full particulars first letter.
Ohio Valley Bee Co., Catlettsburg, Ky.

I AM IN NEED OF large quantities of good honey. Please send samples and best prices.
Chas. M. Boothby, Griggsville, Ill.

WANTED—Partner in apiary. Honey extracting canning plant, house work, etc. Lady is preferred.
A. L. Harris, Winston, Mont.

HONEY—State price and send sample.
Paul Thomae, 1157 Third St., Milwaukee, Wis.

YOUNG MAN, age 21, seeks situation on a bee farm. Good knowledge of bees and appliance work.
H. Ball, Tedburrow, Hemyock, Cullompton, Devon, England.

WANTED—Clean, honest and industrious young man experienced in queen rearing, to work 190 colonies on shares and furnish queens for our trade. Married man preferred.
D. L. Ulman, Saginaw, West Side, Mich.

WANTED—Man for extracted honey. State age, experience and wages wanted.
B. F. Smith, Jr., Fromberg, Mont.

A YOUNG man of energy and character who wishes to learn practical beekeeping where carloads of honey are produced. Every chance to learn and small wages given. Write, giving age, height, weight, habits, former employment, experience, photo, all in first letter. Over 1000 colonies, 14 apiaries. E. F. Atwater, Meridian, Idaho (former Special Field Agent in Beekeeping, U. S. Dept. Agr.).

WANTED—A position with a commercial beekeeper, by a married man 29 years of age. Have had eight years' experience with bees, also took a course in beekeeping at the University of Tennessee. Have been manager of the University of Tennessee Apiary (consisting of 80 colonies) for the past three years, during which time I taught beekeeping to the vocational students. If desired, good references will be furnished. For full particulars, write H. B. Steele, Rogersville, Tenn.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendering.

Fred W. Muth Co.,
204 Walnut St., Cincinnati, Ohio.

WANTED—Comb honey.
Jamison, 690 Adams, Memphis, Tenn.

WANTED—Car or less lots of clover honey; mail sample and quote lowest cash price.
A. W. Smith, Birmingham, Mich.

BEAR'S MOUNTAIN BRED BEES—
Hinton, West Virginia.

GRADING OF PACKAGE BEES

By L. T. Floyd.

This is an age where the word "grade" comes to us from every quarter. Our butter, eggs and honey and many other commodities are marked so that the man who requires a superior article and is willing to pay the price can get what he needs and know what he is buying.

A package of bees may mean a certain number of individuals and the party who receives them does not worry much about how they look, but the amount of honey they gather is the point that interests everyone.

In the season of 1922 we encouraged a few of our beekeepers to purchase twenty packages of bees from the South, hive them in new hives on drawn combs and be prepared to supply the demand for full colonies of bees that always confronts us in the spring. These were ordered and delivered in late April or the first week in May and by the last week in May they covered seven or eight combs and were exactly right to ship. The experiment gave every satisfaction. The buyer paid \$20 per colony delivered and secured honey enough to pretty nearly square his accounts by fall, and our department was relieved of the demand to supply the bees through a government agency, which we consider as seldom satisfactory.

The parties who engaged in this work received a substantial, though not exorbitant, profit, and created a market that last season (1923) required enlargement. Advertisements were placed in agricultural papers, supplies were purchased, nailed and painted and orders received, preparatory to making this a real business. One or two parties advertised at \$20 per colony with 10 per cent off for cash. This brought

the cash with every order and one man had 125 orders. He had the money to pay for the supplies, buy and pay for the bees and everything looked good for a nice business. The packages were to be delivered to him before May 1st, and he was careful to buy in lots of 25 from different shippers, as he feared to take a chance on one. On the 20th of April he received one shipment and hived them. On the 25th he received another, and he was wearing a happy smile, but this was not to last. About May 1st another lot of ten arrived. He began to get anxious. He visited the express office every morning, but it was not until the 20th that the balance of these shipments arrived. He had promised to deliver before the 20th and the letters began to pour in. He was so busy with the bees that he did not relish this addition to his work and was forced to work nearly all night in order to keep these kickers quiet. Besides, our office at the Government building began to receive letters. "Was this man reliable? He has our money and won't ship. What will we do to get either the bees or the money?"

Finally, everyone was satisfied, but it caused a lot of worry, and others will be careful next year. Now, the point that I have attempted to reach in a very roundabout way is that the bees shipped by the first men were worth just twice as much money as the last, and the same price was paid for each. I believe that the shippers should receive at least a dollar more for a two-pound package for bees shipped before May 1st than those shipped later. There are some who do not need their bees before the middle of May, but when the price is uniform they order for the first. If there was a difference in the prices as the difference in prices of queens are now graded, the line would be drawn and the man who wants his bees early could get them and pay the price, while the fellow who is not so particular can wait and is induced to do so by the lower price. Under the present plan, everybody wants their bees on the same date and we do not wonder that some are disappointed.

Let us hear from the man on the other end of the line. He keeps too quiet to please us.

Honey and Bread

According to L. A. Rumsey, of the Wheat Council of the United States, those pushing the campaign to eat more bread are continually reminding committeemen wherever toast campaign plans are discussed that "Honey and Toast" or "Honey and Bread" are valued slogans along with others of the food interests. They are using every opportunity to impress the importance of honey as a spread.

Such a slogan which suggests the combined use of bread and honey cannot fail to serve both the growers of wheat and the producers of honey better than either could be served by a slogan featuring one by itself.

ADVERTISEMENT

To those who can use 10 or more packages: We can give you the following rock bottom prices on our high grade three-banded bees and queens.

We have men that understand the package business and we are fortunate enough to have with us one of the best queen breeders in Louisiana. As we intend making this business a lifetime one, we must have a good foundation. We ship on a standard frame brood and honey, the natural food for bees in transit. Note this food frame is drawn from full sheet foundation and four strings wire; nothing but the best we send you. This frame gives a chance to introduce queens if they are wanted; no dead queens or halled in arrival; easy to transfer to hive.

After experimenting in beekeeping for the last 14 years, we find that the comb package is far superior to any other. We mean actual DOLLARS. Our BREEDERS are the famous SHAW LINE bred QUEENS. Order early so as to have your bees when you expect them. We guarantee to ship bees on date promised, considering weather. We always like to have three days grace on any shipment of bees. We are equipped to ship 1,000 packages each week, beginning May 1. Send in your order now. Bees move via express only.

10 2-lb. no queen, no comb, in large roomy package	\$28.50	50 2-lb.	\$130.00
25 2-lb.	\$67.50	100 2-lb.	\$240.00
Extra frame brood and honey or pound of bees, 75c each.			
Prices on our high-grade Queens			
10 queens	\$ 9.00	50 queens	\$45.00
25 queens	\$22.50	100 queens	\$85.00

OUR GUARANTEE WE STAND

All dead bees promptly replaced on receipt of bad order report signed by your Express Agent. Government health certificate with each shipment. Absolutely no bee disease. Address, CENTRAL LOUISIANA APIARIES, Hamburg, Louisiana.

BERRY'S QUEENS AND PACKAGE BEES

Bring repeat orders because they insure honey crops and satisfaction to the buyer.

Booking orders now for Queens and Packages for 1924 delivery.

Write for descriptive price list.

M. C. BERRY & CO., Montgomery, Alabama BOX 697

Queens—Package Bees. Queens—Three-Banded Only

Mr. Beekeeper: Now is the time to place your order for the season's needs. I have the stock, equipment and experience necessary to produce queens and bees. My queens are reared by men who know how. Each and every queen or package positively guaranteed to reach you in perfect condition and to give perfect satisfaction. You are the judge and jury. Ask your beekeeping friends what my strain of bees have done for them. Place your order now and be on time. One-fourth down, balance before shipping date.

Prices of Queens					Pound Packages, with Select Untested queens	
	1	6	12	100	By Express.	
Untested	\$.90	\$ 5.25	\$ 9.50	\$70.00	2-lb. pkgs., 1 to 12,	\$4.25 ea.; 12 to 50, \$4.00 ea.
Select untested	1.00	5.75	10.50	75.00	3-lb. pkgs., 1 to 12,	\$5.25 ea.; 12 to 50, \$5.00 ea.
Tested	2.00	10.00	20.00	150.00	Order direct from this ad.	

THE FARMER APIARIES, Ramer, Alabama



For years we have been shipping thousands of pounds of bees all over the U. S. and Canada

Order Direct from this Ad.

We are prepared to take care of your rush orders

2-lb. package bees, \$3.75 each, 25 or more, \$3.60 each.
2-frame nuclei same price as 2-pound packages.
3-lb. package bees, \$5.25 each; 25 or more, \$5.00 each.
3-frame nuclei same price as 3-pound packages.

Untested queens, \$1.00 each; 25 or more, 85c each; \$70.00 per hundred.

This is a special SALE on untested queens of high quality.

Select untested, \$1.70; 25 or more, \$1.50 each.

Select tested, \$2.65 each; 25 or more, \$2.25 each.

Tested, \$2.25 each; 25 or more, \$2.00 each.

Breeders, \$5.00 to \$15.00.

ITALIAN

CARNIOLANS

GOLDENS

AULT BEE COMPANY, San Antonio, Texas

SUCCESSORS TO NUECES COUNTY APIARIES



GOOD COMBS

Most beekeepers realize that a well-designed frame and a good grade of foundation are among the requisites for producing a good drawn comb. Few, however, apparently realize the importance of **GOOD WIRE**—wire which will neither **stretch** nor easily **break** as it is being drawn taut in the frame.

In this we believe we are taking the lead in announcing a **BETTER GRADE OF FRAME WIRE** at no advance in price.

To bee comb foundation the wires serve as reinforcement just as steel is used to reinforce concrete. To the frame the horizontal wires serve as a "tie," just as steel cables serve as a "tie" on a bridge. By reinforcing the foundation and by tying the frame, the ultimate drawn comb will be **reinforced** and **tied**.

METAL EYELETS may be used to advantage to prevent slackening of the wires, due to cutting into the end bars of the frame. Metal eyelets also materially increase the speed of wiring by greatly reducing the heavy "drag" when pulling the wires through non-eyeleted end bars. You put them into the end bars yourself.

<p>"SUPERIOR" FRAMES "SUPERIOR" FOUNDATION "SUPERIOR" FRAME WIRE "SUPERIOR" METAL EYELETS</p>	<p>{ A COMPLETE "SUPERIOR" UNIT }</p>	<p>{ A FINISHED DRAWN COMB }</p>
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NO SAGGING, NO ADULTERATED WAX

NO WARPING, NO GNAWING ALONG THE WIRES

For prices and further information, write

SUPERIOR HONEY COMPANY

IDAHO FALLS, IDAHO

OGDEN, UTAH

RIVERSIDE, CALIF.

CHICAGO FOR QUALITY CHICAGO FOR SERVICE

When you get **ROOT QUALITY BEE SUPPLIES** from the greatest shipping center in America you get **SATISFACTION**. You get a superior grade of goods in **QUALITY** and **WORKMANSHIP**. Trains leave Chicago daily with connection for your station.

Write for our new free 1924 Catalog.

Let us quote you on your wants.

**A. I. ROOT CO. OF CHICAGO, 224-230 W. Huron Street
CHICAGO, ILLINOIS**

QUEENS
Three-band Italians

PACKAGE BEES

QUEENS
Silver Gray Carniolans

My northern yards are located near Redding, Calif., the most northern point from which **EARLY PACKAGE BEES** and **QUEENS** can be reared in California.

531 miles from Portland, Ore., 716 miles from Seattle, Wash., 872 miles from Vancouver, B. C., 909 miles from Spokane, Wash. I am close to you with not a single hot valley to pass through. Think of the saving in time and express charges, besides a still greater saving in having the bees reach you in perfect condition. I use pure cane sugar syrup for feed in transit and guarantee no disease, also safe arrival.

My Northern customers have shown their appreciation of my Northern service, to such an extent the past season, that I am now adding 2,000 additional large standard three-frame queen-mating hives, besides over 1,000 full colonies, exclusively for Package Bees.

Eastern and Northern shipments via Ogden, Utah, will be shipped from San Jose, Calif., as before.

ORDER DIRECT FROM THESE PRICES:

1-pound package, \$2.00 each; 10 or more, \$1.75 each. 2-pound package, \$3.50 each; 10 or more, \$3.00 each
3-pound package, \$4.50 each; 10 or more, \$4.00 each. 1 untested queen, \$1.00; 25 or more, 90c each
1 select untested queen, \$1.25; 25 or more \$1.00 each. 1 select tested queen, \$2.50; 25 or more, \$2.00 each

Breeders, extra select and tested for breeding, \$5 to \$10

Add price of queen when ordering packages. Orders booked with 10 per cent deposit, balance before delivery.

Write for prices in large lots. No order too large—No order too small.

References by permission: Security State Bank, San Jose. First National Bank, Chico, Calif. Bank of Cottonwood. Cottonwood, Calif.

J. E. WING, 155 SCHIELE AVE., SAN JOSE, CALIF.

HONEY WANTED

We are ready at any time of the year to take in small or large lots of extracted honey.

Send us a sample and advise quantity you have and the price wanted.

HOFFMAN & HAUCK, Woodhaven, N. Y.

LET'S GET TOGETHER

Last month we told you of the new shipping boxes that we are using to ship our combless packages in for the season of 1924, and we firmly believe that they are the best shipping package in existence today. This month we want to tell you a little about the quality of our bees and queens, and what you may expect if you favor us with your order. For example, the 4½-pound package sent Mr. Barr, that was mentioned in last month's advertisement, was received by him on June 11, producing 130 pounds of surplus honey, leaving plenty for winter stores. The total labor by Mr. Barr amounted to 3¼ hours. This can only mean good management by the buyer and the highest quality of bees and queens, and the most convenient shipping package in existence today. We could fill pages with similar testimonials, but space is too valuable. If you buy from us, you may expect the following: One hundred cents of value for every dollar spent by you. Good full weight packages, with 10% extra weight added to make up for shrinkage of bees on trip. Prompt shipment with full directions for handling bees and queens on arrival. We have never, in more than nine years of shipping bees, had to delay an order given us more than four days, then only on account of bad weather. We have never promised a customer bees and disappointed him by saying that we could not ship at all. Fair, courteous treatment to all. What more can you ask? Send for circular giving prices and detailed information of our bees and queens, and give us a trial if you want to do business with a firm giving a square deal.

GEO. A. HUMMER & SONS, PRAIRIE POINT, MISS.

ITALIAN BEES AND QUEENS

Over 2,000 colonies of **SUPERIOR ITALIAN BEES** to draw from to supply you your wants, in packages and nuclei.
Two-pound packages bees or two-frame nuclei with queen ----- One, \$4.50. Ten or more, \$4.00
Three-pound packages bees or three-frame nuclei with queen ----- One, \$5.50. Ten or more, \$5.00

LOOK AT THESE PRICES

Send 10c for a sample Hoffman frame and save \$23.00 on 1,000.

Medium Brood Foundation ----- One pound, 70c. Five pound lots, 64c. Twenty-five pound lots, 58c.
We guarantee this foundation to give you perfect satisfaction, and it will only cost you a little over 7c a sheet in 25-pound lots.

25 10-frame shallow extracting supers with frames-----\$18.75	25 8-frame shallow extracting supers with frames-----\$16.75
100 10-frame shallow extracting supers with frames-----\$70.00	100 8-frame shallow extracting supers with frames-----\$62.00
White pine Hoffman frames—1,000 full depth, \$45.00; 1,000 shallow, \$32.00.	
25 10-frame hive bodies with frames-----\$31.25	25 8-frame hive bodies with frames-----\$28.75
100 10-frame hive bodies with frames-----115.00	100 8-frame hive bodies with frames-----105.00

All bodies made of good cypress and dovetailed.

Good used 7-wire and wood excluders at 50c each. Write for our 1924 catalog.

THE STOVER APIARIES
MAYHEW, MISS.

BURR COMBS

WHIRLING WHEELS

By C. S. Swanson.

The editor of this honey-gathering paper said he had an extra page if I wanted to fill it up. He said if I could find the last Burr Combs I wrote he would run that, because he didn't think anyone had read it. I can't find it, so it will never be printed again. See what you have missed!

Much has been said of the pessimism of beekeepers, but the beekeepers I know are solid optimists. When they get a short crop their by-word is, "Wait till next year; look at the prospects." And maybe not the next year, but soon, they get a crop that laps over a number of meager years. Remember, even in big business a little money is made when business is good and some lost when business is poor. The point to strive for is to keep business good and keep it getting better.

SELLING HONEY

There are thousands of men in all lines of business and failures in all lines. And again, there are all degrees and stages of success and failure. As an employer told one of his workmen, "I can't show any profit on what you are making." "Well, what am I making?" asked the workman. "Mistakes," was the reply.

The beekeeper has one main product—honey. It is certainly a mistake to sacrifice this product, for which he has labored during the entire year. He should get information regarding prices; make a remunerative price and stick to it.

I know one beekeeper who in one respect, reminds me of U. S. Grant.

As the story goes, when Grant was a youngster he wanted a horse, and as a man had one to sell, Grant's father told U. S. how to buy it.

With buying dope and money, U. S. approached the horse trader and drove his shrewd bargain. He began, "Father said to offer you \$15 for the horse. If you won't take that I will give you \$20, and if you still hold out, I am to pay you \$25." U. S. secured the horse and, although it is no secret, I won't tell what price he paid.

Of course, no reader of the American Bee Journal sells his honey in this way, but his neighbor beekeeper may.

TREAT IT ROUGH

The Dixie Beekeeper tells of the ravages of bears in the apiary. As I understand it the bear makes the hive bare of honey so the bear is full of honey, and the beekeeper bears up under the disaster as best he can. The bear's motto seems to be, "Bare and for bear."

I see that the beekeepers are forming clubs to protect their apiaries

from these animals. One beekeeper formed a club from a stout branch and lambasted the bear into the next swamp.

We can't fight foulbrood in exactly the same manner, but if each beekeeper in the infected districts used one-half the energy in combating foulbrood that the beekeeper expended in driving out the bear, conditions would be different. In the words of Longfellow, "There were no need for inspectors and reports."

A nice little legend for each beekeeper would be, "Every man his own inspector." Think what a saving in taxation and appropriations!

HOW ABOUT IT?

That very nice old saw, "There are tricks in all trades but beekeeping," fell through the other day when we received a picture of a hive of bees with eight or ten supers on it, marked "Large crop of honey from one hive." In the background of the picture there were several other hives, but not one had a super on. Shall we change this to "Crop of entire apiary on one hive," or can we have an explanation?

WHY NOT ADVERTISE?

When one speaks of the lack of demand for honey, don't you wonder why honey isn't advertised more extensively? Many people think extracted honey is made up of some extract and brown sugar, and that comb honey has hair in it.

Read the story of Wm. Wrigley's success in marketing chewing gum! His big problem was marketing, and his efforts were futile the first two attempts that he made. Then while the rest slept he studied over the results and expended the larger part of his capital in advertising; and now people chew gum and are, for a large part, unaware that honey was ever produced. Advertising alone put gum on a paying basis and the lack of advertising has put a delicious natural sweet out of the minds of the consumer. The individual beekeeper can't afford to put on an advertising campaign of this kind, and it would not be fair nor appropriate for each beekeeper to advertise only in his own community, since some regions produce large amounts which are shipped across the continent into his market. Why not an advertising tax based on the number of colonies or on the amount of surplus honey produced? This could be expended by a committee composed of advertisers and beekeepers who would devote a certain amount of time in this work? But why dream of idealism?

Exhibits of honey at fairs are good advertising for the sale of honey.

Live bees draw the crowds. An observation hive is worth its weight in freight charges when it comes to bringing the people close enough to be assailed with propaganda regarding the food value of honey.

Did you ever take an extractor with your exhibit and listen to the questions asked about it? I did. I heard it called everything—a churn, a washing machine, a concrete mixer, bakers' equipment, and a gasoline saver for Ford cars.

During the Great World War we had substitutes for everything, especially in the way of some of the important food products. The war is over and, just between ourselves, let's not let any cheap, unhealthy substitute take the place of honey.

We all enjoy working with bees and, with the interest shown by beekeepers, and by colleges and universities with their courses in beekeeping; with a department of our Federal Government aiding us, can there be anything but progress in beekeeping? When we produce enough honey to make it a drug on the market, someone will market it for us, so there is no need to cross a river while you are thirsty. Let's go on and make this world a better place to keep bees.

WHEN IS A BEE NATIVE?

I wonder how this controversy about the origin of bees in North America is going to end? After reading the advertisements for package bees and queens, one would judge that the immigrants were in prominence and, if there are any native bees, they are not worth writing about. Italians, Caucasians, Carniolans and other foreign races seem to be kept pure in race (?) and are not allowed to intermingle even in this land which is called the "melting pot of the earth."

If Dr. Phillips' immigration restrictions continue we may expect the honey-gatherers, thus protected from outside labor, to form the "Affiliated Association of Nectar Harvesters" and strike for larger hives, pure beeswax, improved foundation, ample supers and greater winter stores. And we wouldn't lose by granting such requests.

BOSH!

A report has been circulating that a swarm of bees clustered on the Mississippi River bridge here last summer and built their combs directly below the roadway. This colony grew strong (or waxed mighty) and their combs reached down into the water, causing a difference of several inches in the level of the water above and below the bridge. It is alleged that during the past winter the bees so honeycombed the ice that it was unsafe to skate near the bridge.

The force at the Dadant works feel sure that such a strong colony must have issued from a large hive.



ALWAYS MAKE SURE THAT THIS TRADE-MARK IS STAMPED ON EACH PIECE OF

"Tidewater" Cypress
"THE WOOD ETERNAL"

THEN YOU BUY SAFETY (AND SATISFACTION) FIRST, LAST AND 'TWEEN TIMES



"ALL-HEART" GRADE FOR BEEKEEPERS' USE

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AMERICAN BEE JOURNAL, Hamilton, Ill.

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Has the Only Natural Base
Angle

It is refined by the famous AIRCO process, making it denser, tougher, cleaner, more ductile and capable of staying fresh the longest. AIRCO Foundation is accepted by the bees quicker than any other foundation. AIRCO Foundation meets all requirements.

THREE-PLY Airco

The Perfect Foundation for Brood and Extracting Combs

Non-sagging	No gnawing around wires
Non-warping	Non-breakable in extractor
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SINGLE-PLY Airco

The Best Foundation for Comb and Chunk Honey

**Buy Airco—The Best
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